FINAL

Site Inspection Prioritization Report

12/17/94 4/193

Bagcraft Corporation

Forest Park, Clayton County, Georgia EPA ID No. GAD054228432 WasteLAN No. 01485

Prepared Under
Contract No. 68-W9-0055
For The
U.S. Environmental Protection Agency

Prepared By: Halliburton NUS for B&V Waste Science & Technology Corp. BVWST Project No. 52012.108

DECEMBER 30, 1993

Prepared By

Suzanne Quillian HNUS Site Manager **Reviewed By**

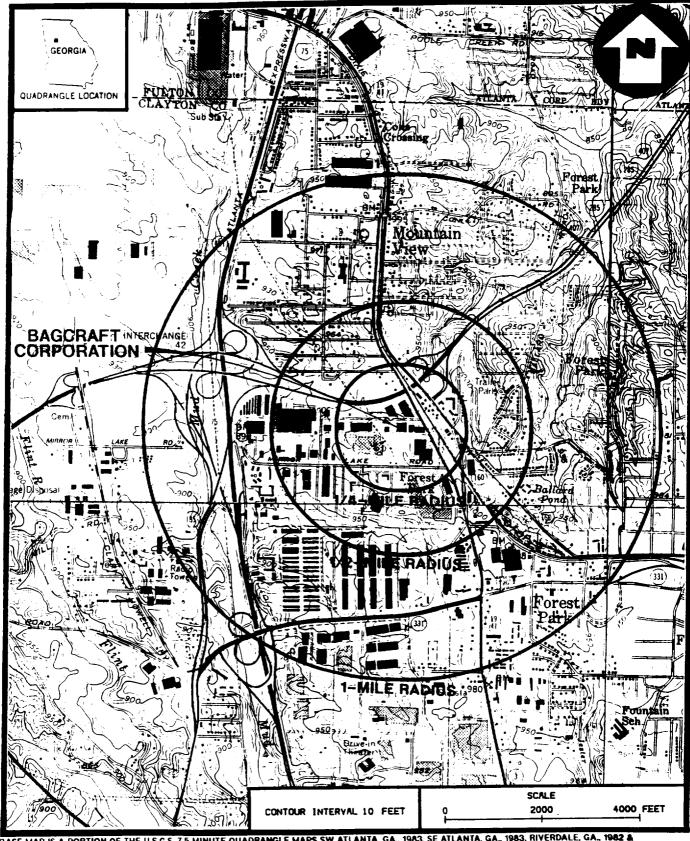
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FINAL SITE INSPECTION PRIORITIZATION REPORT BAGCRAFT CORPORATION FOREST PARK, CLAYTON COUNTY, GEORGIA

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BASE MAP IS A PORTION OF THE U.S.G.S. 7.5 MINUTE QUADRANGLE MAPS SW ATLANTA, GA., 1983, SE ATLANTA, GA., 1983, RIVERDALE, GA., 1982 & FIGURE

SITE LOCATION MAP

BAGCRAFT CORPORATION

FOREST PARK, CLAYTON COUNTY, GEORGIA



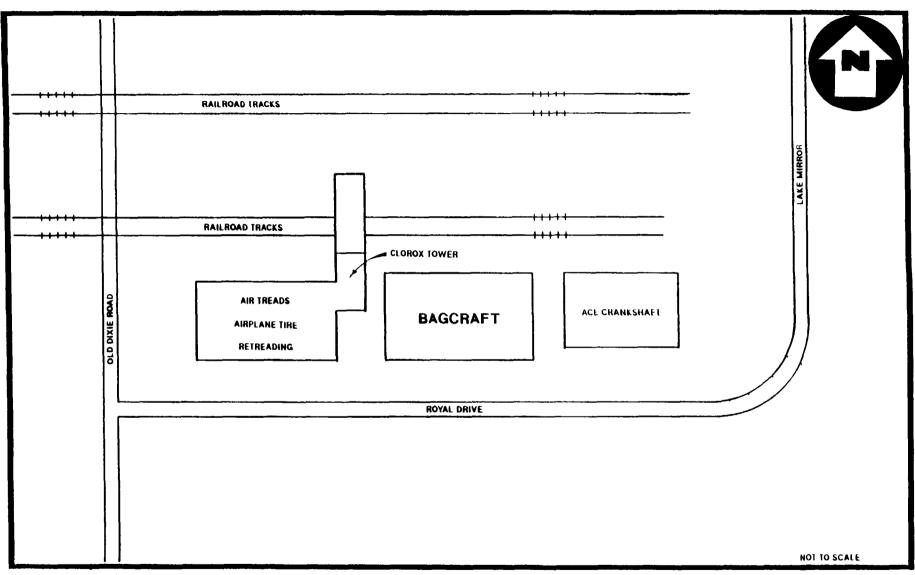


FIGURE 2

SITE LAYOUT MAP

BAGCRAFT CORPORATION
FOREST PARK, CLAYTON COUNTY, GEORGIA



SITE ASSESSMENT

Final Site Inspection Prioritization Bagcraft Corporation

Forest Park, Clayton County, Georgia EPA ID No. GAD054228432

WasteLAN No. 01485

1.0 Introduction

Halliburton NUS Corporation was tasked by B & V Waste Science and Technology Corporation under U.S. EPA Contract No. 68-W9-0055 to conduct a Site Inspection Prioritization (SIP) for Bagcraft Corporation in Forest Park, Clayton County, Georgia. This study was performed under the authorization of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments Reauthorization Act of 1986 (SARA).

The SIP will update the Preliminary Assessment and Site Inspection reports completed by the U.S. EPA, by utilizing the Hazard Ranking System (HRS). Other sources of information used during the evaluation include U.S. EPA CERCLA file material and available state information from the Georgia Environmental Protection Division (EPD) Office of the Department of Natural Resources. The SIP will quantify the threats posed by the site and provide sufficient documentation in order to decide on the appropriate future course of action.

2.0 Site Description and History

Bagcraft Corporation is located less than 0.25 mile from Interstates 285 and 75 off of Old Dixie Highway at 18 Royal Drive in Forest Park, Clayton County, Georgia (Refs. 1, p. 2; 2). The geographical coordinates of the facility are 33° 37′ 46″ N latitude and 84° 23′ 21″ W longitude (Ref. 2). The site location and site layout are shown in Figures 1 and 2. The average annual precipitation for Forest Park, Clayton County, Georgia, is 48 inches, and the mean annual lake pan evaporation is 41 inches, yielding a net precipitation of 7 inches (Ref. 3, pp. 43, 63). The 2-year, 24-hour rainfall for the area is 3.5 inches (Ref. 4, p. 95).

Bagcraft Corporation is located in a heavily trafficked industrial/commercial area of Forest Park, Clayton County, Georgia (Refs. 1, p. 3; 2). The facility, which is currently active, is composed of one brick building located on a 1.3-acre tract and is owned by Bagcraft Corporation of America in Chicago, Illinois (Refs. 1, p. 2; 5). The facility is bordered to the north by an abandoned brick building,

to the east by Air Treads (an airplane tire manufacturer), to the west by ACE Crankshaft, and to the south by railroad tracks (Ref. 1, pp. 2, 3). Storm drains and drainage ditches are located all along Royal Drive and would collect any runoff from Bagcraft Corporation and the other facilities in the area (Ref. 1, p. 3). During the facility reconnaissance on April 8, 1993, the facility was very tidy and secure; no areas of past or present waste disposal or leakage were observed (Ref. 1, p. 4).

Bagcraft Corporation manufactures flexible packaging material to produce various types of bags and employs 29 workers (Refs. 6, p. 127; 7). The facility was first identified under CERCLA on March 26, 1980, following a citizen complaint that the facility was dumping inks, alcohols, and acetates on the ground (Refs. 8, 9).

A Preliminary Assessment (PA) was conducted by the U.S. EPA on April 15, 1980. During the PA, it was noted that alcohols and acetates stored in a tank were leaking into the saturated ground and that some ink disposal had occurred on site. In addition, waste material was being stored in drums at the facility (Ref. 9). Runoff at this time was directed from the storage area to the railroad tracks in back of the facility (Refs. 8, 9). Concurrently, a Site Inspection (SI) Report (4/16/80) was prepared by the U.S. EPA and stated that a milky white substance, contaminated soil (stains), ethyl acetate, and 40 barrels were observed on the side of the facility building (Ref. 7). The SI concluded that there was no evidence of ongoing hazardous waste disposal, but some drum spillage was noted adjacent to the building and a few square feet of stained soil was observed (Ref. 7). On April 16, 1980, a Final Strategy Determination was prepared by the U.S. EPA. The report recommended that no further action was needed at the facility because the minor problems noted at the facility during the PA and SI were too small to present a threat to human health or the environment (Ref. 10). According to available file material, no sampling has been recommended for or conducted at the facility.

3.0 Groundwater Pathway

3.1 Hydrogeologic Setting

Bagcraft Corporation is located in the southern Piedmont belt of the Piedmont physiographic province (Ref. 11, p. 9). Underlying the facility are surficial deposits of residual soil and weathered rock which overlie the fractured bedrock of the Camp Creek Formation (Refs. 11, plates I, Ib; 12, pp. 8, 9). The Camp Creek Formation consists of a massive granite gneiss interlayered with hornblende-plagioclase amphibolite, and it is part of the Atlanta Group, a large synclinal stratigraphic succession of rocks that trend northeast-southwest across the greater Atlanta area (Ref. 11, pp. 23, 42, 87). The aquifer of concern in the area is the unconfined residual soil/crystalline rock aquifer system (Ref. 13, pp. 12, 13). Groundwater is contained within the pore spaces of the surficial

deposits and in the joints, fractures, and other secondary openings in the bedrock (Ref. 12, p. 8). Hydraulic conductivity values for the surficial deposits are estimated to range from 1 x 10-5 to 1 x 10-7 cm/sec (Ref. 14, p. 29). The depth to the water table is highly dependent on topography and changes in precipitation (Ref. 12, pp. 8, 9). Based on an analysis of a topographic map of the area surrounding Bagcraft Corporation, the depth to groundwater is estimated to range from 20 to 40 feet below land surface (Ref. 2). Wells drilled in this area typically yield at least 50 gallons per minute (Ref. 15, p. 39). The direction of groundwater flow is generally toward streams and rivers and thus should flow to the southeast (Refs. 2; 12, p. 9).

3.2 Groundwater Pathway Targets

There is no known use of groundwater for drinking, irrigation, or other agricultural purposes in the study area. No private wells have been identified (Ref. 16).

4.0 Surface Water Pathway

4.1 Hydrologic Setting

Surface water runoff from Bagcraft Corporation would either be directed to storm drains which are located all along Royal Road, or it would percolate into the ground. The storm drain system in this area follows the contours of the land to the nearest surface water body; however, the storm drains do not work as intended because they are blocked and caved in. Flooding occurs during heavy rains, and the water either percolates into the gound or evaporates (Ref. 17). No other viable surface water pathway can be identified because the facility is located in an industrial area bounded by railroad tracks and Interstates 285 and 75 (Refs. 1, p. 3; 2). In addition, the facility is located outside the 500-year flood plain (Ref. 18).

4.2 Surface Water Targets

There is no surface water pathway for this facility; therefore, targets were not evaluated (Refs. 1, p. 3; 2).

5.0 Soil Exposure and Air Pathways

5.1 Physical Conditions

Bagcraft Corporation is located in an industrial/commercial area in Forest Park, Georgia. Hartsfield International Airport is located within 1 mile of the facility. During a reconnaissance on April 8, 1993, the facility was found to be secure and tidy in appearance, although access to the property surrounding the building is possible. No stained soil, drums, or other indications of waste-handling problems were observed. There are no schools or day-care centers within 1 mile of the facility. Also, no houses were observed within 0.5 mile during the reconnaissance (Ref. 1, pp. 2-4).

5.2 Soil and Air Targets

According to U.S. Bureau of the Census data (GEMS, 1980), there are 945 people located within 0.5 mile of the facility, 2,593 people within 0.5 to 1 mile, 16,503 people within 1 to 2 miles, 27,800 people within 2 to 3 miles, and 43,972 people within 3 to 4 miles (Ref. 19). In addition, 29 workers are employed at the Bagcraft facility (Ref. 6). No sensitive environments have been identified within 4 miles of the facility (Refs. 20, 21).

6.0 Conclusions and Recommendations

The Bagcraft Corporation facility was evaluated to assess the threat posed to human health and the environment and to determine the need for additional investigation. From the information gathered in the study of Bagcraft Corporation, it is recommended that no further action be taken for this facility.

REFERENCES

- Halliburton NUS Corporation Logbook No. A-0064 for Bagcraft Corporation, BVWST Project No. 52012.108. Documentation of facility reconnaissance, April 8, 1993.
- 2. U.S. Geological Survey, 7.5 minute series topographic quadrangle maps of Georgia: Southeast Atlanta 1954 (photorevised (PR) 1983), Southwest Atlanta 1954 (PR 1983), Jonesboro 1954 (PR 1983), Riverdale 1954 (PR 1983), scale 1:24,000.
- 3. U.S. Department of Commerce, <u>Climatic Atlas of the United States</u> (Washington, D.C.: GPO, 1983).
- 4. U.S. Department of Commerce, <u>Rainfall Frequency Atlas of the United States</u>, Technical Paper Number 40 (Washington, D.C.: GPO, 1961).
- 5. Clerk, Clayton County Tax Assessor's Office, telephone conversation with Suzanne Quillian, Halliburton NUS Corporation, April 19, 1983. Subject: Property ownership and size.
- 6. <u>Georgia Manufacturing Directory 1991-92</u> (Atlanta, Georgia: Georgia Department of Industry, Trade and Tourism, 1991), p. 127.
- 7. Potential Hazardous Waste Site, Site Inspection Report (EPA Form T2070-3) for Bagcraft Corporation. Filed by David Brentzel, U.S. EPA, April 15, 1980.
- 8. Potential Hazardous Waste Site Log (EPA Form T2070-1) with attached summary for Bagcraft Corporation. Filed by R. Ferrazzuolo, U.S. EPA, date unknown.
- 9. Potential Hazardous Waste Site Identification and Preliminary Assessment (EPA Form T2070-2) for Bagcraft Corporation. Filed by R. Ferrazzuolo, U.S. EPA, April 15, 1980.
- 10. Potential Hazardous Waste Site Final Strategy Determination (EPA Form T2070-5) for Bagcraft Corporation. Filed by R. Ferrazzuolo, U.S. EPA, April 16, 1980.
- 11. Keith McConnell and Charlotte Abrams, <u>Geology of the Greater Atlanta Region</u>, Bulletin 96 (Georgia Geologic Survey, 1984).

- 12. H.E. LeGrand, <u>Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States</u>, Circular 538 (Washington, D.C.: GPO, 1967).
- 13. U.S. Geological Survey, <u>Ground-Water Data for Georgia</u>, <u>1987</u>, Open-File Report 88-323, 1988.
- 14. R. Allan Freeze and John A. Cherry, <u>Groundwater</u> (Englewood Cliffs, N.J.: Prentice Hall, 1979).
- 15. C.W. Cressler, C.J. Thurmond, and W.G. Hester, Groundwater in the Greater Atlanta Region, Georgia, Circular 63 (Georgia Geologic Survey, 1983).
- 16. Gilbert Peeples, Director, Clayton County Water Department, telephone conversation with Suzanne Quillian, Halliburton NUS Corporation, April 6, 1993. Subject: Water use in the Forest Park, Clayton County, and Atlanta areas.
- 17. Russell Morehead, Clayton County Public Works Department, telephone conversation with Suzanne Quillian, Halliburton NUS Corporation, April 28, 1993. Subject: Drainage system in the study area.
- 18. Federal Emergency Management Agency (FEMA), National Flood Insurance Program, Flood Insurance Rate Map, Community-panel number: 130041 0060 C, map revised November 6, 1991, Clayton County, Georgia.
- 19. U.S. Environmental Protection Agency, <u>Graphical Exposure Modeling Systems (GEMS) Data Base</u>. Compiled from U.S. Bureau of the Census data (1980).
- 20. Georgia Department of Natural Resources, Freshwater Wetlands and Heritage Inventory Database, Southwest Atlanta, Southeast Atlanta, Jonesboro, and Riverdale quads, July 1990.
- 21. U.S. Fish and Wildlife Service, Southeast Region, <u>Endangered and Threatened Species of the Southeastern United States (The Red Book)</u> (Atlanta, Georgia, January 1992).

CONFIDENTIAL
HAZARD RANKING SYSTEM PRELIMINARY SCORE
FOR
BAGCRAFT CORPORATION

BAGCRAFT CORPORATION
FOREST PARK, CLAYTON COUNTY, GEORGIA

This preliminary score was calculated using the PA-Score worksheets. All four pathways are

evaluated.

The following score reflects a hazardous waste quantity of 18, as the area of contaminated soil is

approximately 5 square feet. No sampling has been conducted at this facility.

In 1980, there was a report of leaking alcohol and acetate tanks and ink disposal on the ground, but

there are no viable groundwater targets. Groundwater is not used for drinking, irrigation, or other

agricultural purposes in the study area.

There is no viable surface water pathway because the facility is surrounded by storm drains, railroad

tracks, and two major interstate highways. The storm drainage system in the area does not work as

intended, and flooding occurs during heavy rains. Therefore, runoff would percolate into the ground

or evaporate.

The soil and air pathways are of minor concern because there are only 29 workers at the facility and

3,538 people who live within 1 mile. The facility property may be accessed but probably not very

easily.

Due to the lack of targets and viable pathways associated with the facility, no further action is

recommended.

 $S_{gw} = 1$

 $S_{sw} = 0$

 $S_{so} = 2$

 $S_a = 6$

OVERALL SCORE = 3





Site Name: Bagcraft Corporation

CERCLIS ID No.: GAD054228432 Street Address: 18 Royal Drive

City/State/Zip: Forest Park, GA 30050

Investigator: Suzanne Quillian Agency/Organization: Halliburton NUS

Street Address: 2075 W. Park Place Blvd.

City/State: Stone Mtn., GA

Date: 04/19/93

Bagcraft Corporation - 04/29/93

WASTE CHARACTERISTICS

** Only First WC Page Is Printed **

Waste Characteristics (WC) Calculations: 5.00E+00 sq ft 1.47E-04 1.47E-04 Area

Waste Characteristics Score: WC = 18

Page: 2

Ground Water Pathway Criteria List Suspected Release

Are sources poorly contained? (y/n/u)	N
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? $(y/n/u)$	N
Is waste quantity particularly large? (y/n/u)	N
Is precipitation heavy? (y/n/u)	N
Is the infiltration rate high? $(y/n/u)$	N
Is the site located in an area of karst terrain? (y/n)	N
Is the subsurface highly permeable or conductive? $(y/n/u)$	N
Is drinking water drawn from a shallow aquifer? $(y/n/u)$	N
Are suspected contaminants highly mobile in ground water? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest ground water contamination? $(y/n/u)$	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	Y

Summarize the rationale for Suspected Release:

Preliminary Assessment (4/15/80) indicates that alcohols and acetates stored in a tank on site have leaked onto the ground. Stained soil of a few square feet was observed behind the facility.

Sugerare corporación 04/25/55	
Ground Water Pathway Criteria List Primary Targets	
Is any drinking water well nearby? (y/n/u)	N
Has any nearby drinking water well been closed? $(y/n/u)$	N
Has any nearby drinking water well user reported foul-testing or foul-smelling water? $(y/n/u)$	N
Does any nearby well have a large drawdown/high production rate? $(y/n/u)$	N
Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest contamination at a drinking water well? $(y/n/u)$	N
Does any drinking water well warrant sampling? (y/n/u)	N
Other criteria? (y/n) N	
PRIMARY TARGET(S) IDENTIFIED? (y/n)	N
Summarize the rationale for Primary Targets:	

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GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics						
Do you suspect a release? (y/n) Yes						
Is the site located in karst to	Is the site located in karst terrain? (y/n) No					
Depth to aquifer (feet):		2(0	2		
Distance to the nearest drinking water well (feet): 23000						
Suspected No Suspected LIKELIHOOD OF RELEASE Release Reference						
1. SUSPECTED RELEASE 550						
2. NO SUSPECTED RELEASE 0						

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION O person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	0	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	5	0	
T =	5	0	

WASTE CHARACTERISTICS	WC =	18	0
GROUND WATER PATHWAY SCORE:			1

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Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist.		Reference	Value
None				
*** Note : Maximum of 5 Wel	ls Are Pr	rinted ***	Total	

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0	16	0
Greater than 1/4 to 1/2 mile	0	16	0
Greater than 1/2 to 1 mile	0	16	0
Greater than 1 to 2 miles	0	16	0
Greater than 2 to 3 miles	0	16	0
Greater than 3 to 4 miles	o	16	0
		Total	0

Apportionment	Documentation	for a	Blended S	System	 	

Surface Water Pathway Criteria List Suspected Release	
Is surface water nearby? (y/n/u)	N
Is waste quantity particularly large? (y/n/u)	N
Is the drainage area large? (y/n/u)	N
Is rainfall heavy? (y/n/u)	N
Is the infiltration rate low? (y/n/u)	N
Are sources poorly contained or prone to runoff or flooding? $(y/n/u)$	N
Is a runoff route well defined(e.g.ditch/channel to surf.water)? $(y/n/u)$	N
Is vegetation stressed along the probable runoff path? $(y/n/u)$	N
Are sediments or water unnaturally discolored? (y/n/u)	N
Is wildlife unnaturally absent? (y/n/u)	N
Has deposition of waste into surface water been observed? (y/n/u)	N
Is ground water discharge to surface water likely? (y/n/u)	N
Does analytical/circumstantial evidence suggest S.W. contam? $(y/n/u)$	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N
Summarize the rationale for Suspected Release:	

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Surface Water Pathway Criteria List Primary Targets	
Is any target nearby? (y/n/u) If yes: N Drinking water intake N Fishery N Sensitive environment	N
Has any intake, fishery, or recreational area been closed? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? $(y/n/u)$	N
Does any target warrant sampling? (y/n/u) If yes: N Drinking water intake N Fishery N Sensitive environment	N
Other criteria? (y/n) N	
PRIMARY INTAKE(S) IDENTIFIED? (y/n) Summarize the rationale for Primary Intakes:	N
continued	

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continued		-
Other criteria? (y/n)	N	
	PRIMARY FISHERY(IES) IDENTIFIED? (y/n)	N
Summarize the rationale for	Primary Fisheries:	
Other criteria? (y/n)	N	
	, , , , , , , , , , , , , , , , , , ,	N
Summarize the rationale for	Primary Sensitive Environments:	
		1

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SURFACE WATER PATHWAY SCORESHEETS

thway Characteristics				Ref.
Do you suspect a release? (y/r	n)	N	0	
Distance to surface water (fee	Distance to surface water (feet):			1,2
Flood frequency (years): >				18
What is the downstream distance (miles) to: a. the nearest drinking water intake? b. the nearest fishery? c. the nearest sensitive environment? N.A.				
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	Refe	rences
1. SUSPECTED RELEASE	0			
2. NO SUSPECTED RELEASE		100		
LR =	0	100		

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Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION O person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	O	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	0	5	
T =	0	5	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body	Type/Flow	Population Served	Ref.	Valu
None						
						
	Tot	al Primary 1	Target Popu	lation Value	•	0
	Tot	al Secondary	Y Target Po	pulation Val	ue	0

*** Note : Maximum of 6 Intakes Are Printed ***

Apportionment	Documentation	for a	Blended	System		
						
						•
1						

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Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	0	0	
T =	0	0	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body	Type/Flow	Ref.	Value
None					
*** Note : Maximum of	Total	Primary Fig. Secondary 1	fisheries Va		0

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Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	0	
T =	o	0	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body	Type/Flow	Ref.	Value
None					
		2			
Total Primary Sensitive					0
Total Secondary Sensitive *** Note: Maximum of 6 Sensitive				**	0

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Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score		Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	100	5	18	0
Human Food Chain	100	0	18	0
Environmental	100	0	18	0

SURFACE	WATER	PATHWAY	score:	0
			1	

Bagcraft Corporation - 04/29/93

Soil Exposure Pathway Criteria List Resident Population	
Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u)	
Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u)	
Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u)	
Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? $(y/n/u)$	
Does any neighboring property warrant sampling? (y/n/u)	
Other criteria? (y/n) N	
RESIDENT POPULATION IDENTIFIED? (y/n)	
ummarize the rationale for Resident Population:	

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SOIL EXPOSURE PATHWAY SCORESHEETS

athway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	No	1,2
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	No	1,2
Is the facility active? (y/n):	Yes	1

LIKELIHOOD OF EXPOSURE		Suspected Contamination	References
1. SUSPECTED CONTAMINATION	LE =	550	

Targets

2. RESIDENT POPULATION 0 resident(s) 0 school/daycare student(s)	0	
3. RESIDENT INDIVIDUAL	0	
4. WORKERS 1 - 100	5	
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	5	
T =	. 10	

WASTE CHARACTERISTICS WC	= 18	
RESIDENT POPULATION THREAT SCORE:	1	
NEARBY POPULATION THREAT SCORE: Population Within 1 Mile: 1 - 1	0,000	

SOIL EXPOSURE PATHWAY SCORE:

2

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Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
None		
Total Terrestrial Sensitive Environments Are Prince Total Sensitive Environments Are Princ	í	

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Air Pathway Criteria List	
Suspected Release	
Are odors currently reported? (y/n/u)	N
Has release of a hazardous substance to the air been directly observed? $(y/n/u)$	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	N
of Mazardous substances through the arr. (y/m/d)	14
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N
Summarize the rationale for Suspected Release:	

AIR PATHWAY SCORESHEETS

athway Characteristics				Ref.
Do you suspect a release? (y/n))	
Distance to the nearest individual (feet):				1
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	Refe	ences
1. SUSPECTED RELEASE	0			
2. NO SUSPECTED RELEASE		500		
LR =	0	500		
argets		·		

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION O person(s)	0		
4. SECONDARY TARGET POPULATION	0	27	
5. NEAREST INDIVIDUAL	0	20	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	0	
8. RESOURCES	0	5	
Т =	0	52	

WASTE CHARACTERISTICS

18

AIR PATHWAY SCORE:

6

Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	29	19	2
Greater than 0 to 1/4 mile	0	19	0
Greater than 1/4 to 1/2 mile	945	19	3
Greater than 1/2 to 1 mile	2593	19	3
Greater than 1 to 2 miles	16503	19	8
Greater than 2 to 3 miles	27800	19	4
Greater than 3 to 4 miles	43972	19	7
	Total Secondary Popul	ation Value	27

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Air Pathway Primary Sensitive Environments

<u> </u>			
Sensitive Environment Name		Reference	Value
None			
			
		<u> </u>	
Total Primary Sens	itive Environme	nts Value	·
*** Note : Maximum of 7 Sensitive Envi Pathway Secondary Sensitive Environme		inted***	
Sensitive Environment Name	Distance	Reference	Value
None			
		l	

Total Secondary Sensitive Environments Value

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SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	1
SURFACE WATER PATHWAY SCORE:	O
SOIL EXPOSURE PATHWAY SCORE:	2
AIR PATHWAY SCORE:	6
SITE SCORE:	3

SUMMARY

1.	Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water?	r No
	If yes, identify the well(s).	
	If yes, how many people are served by the threatened well(s)? 0	
2.	<pre>Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water? A. Drinking water intake B. Fishery C. Sensitive environment (wetland, critical habitat, others) If yes, identity the target(s).</pre>	No No No
3.	Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility?	No
	If yes, identify the properties and estimate the associated population	
4.	Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:	No

Page: 25

REFERENCE LIST

Page: 1

OMB Approval Number: 2050-0095 Approved for Use Through: 4/95

DOMENMENT IN	ZARROUC				II	ENTIF	ICATIO	V
POTENTIAL HAZARDOUS WASTE SITE					State: GA		CLIS No	- - ₁
PRELIMINARY ASSESSMENT FORM					CERCLIS	Disc 03/80	overy 1	Date:
1. General Site Info	ormation							
Name: Bagcraft Corporation			Street 18 Ro	Addr oyal D				
City: State: Forest Park GA			Zip Co 30050				Co. Code: 063	Cong. Dist: 06
Latitude: Longit 33° 37' 46.0" 84° 2		Approx.	Area of 1 acre		Status Activ		ite:	
2. Owner/Operator In	nformation							
Owner: Bagcraft Corporation	on of Amer	ica	Operator: same					
Street Address: 3900 W. 43rd Street			Street Address:					
City: Chicago			City: same					
State: Zip Code: IL 60632				State: Zip Code: Telephone: same				
Type of Ownership: Private	Type of Ownership:				y Identi plaint	fied:		

Page: 2

POTENTIAL HAZARDOUS IDENTIFICATION					ION	
WASTE SITE				State: CERCLIS Num GA GAD0542284		
PRELIMINARY ASSESSMENT FORM						y Date:
formation						
Blvd.						State: GA
Agency Co	ontact:	•	•	065		
		t	-			State: GA
for EPA (use only))				
CERCLIS Recommer NFRAP	ndation:		J	e:		
Date:			Name: Position	ı:		
	SSESSMENT Formation Blvd. Agency Co CERCLIS Recomment	Agency Hallil Agency Hallil Blvd. Agency Contact: CERCLIS Recommendation: NFRAP	Agency/Organisher Agency/Organisher Blvd. Agency Contact: City City At City City At City City At City City At City City	Agency/Organization: Halliburton NUS City: Stone Mtn. Agency Contact: Telephone: (404)347-50 City: Atlanta (for EPA use only) CERCLIS Recommendation: NFRAP Name:	State: GA SSESSMENT FORM CERCLIS Formation Agency/Organization: Halliburton NUS City: Stone Mtn. Agency Contact: Telephone: (404)347-5065 City: Atlanta (for EPA use only) CERCLIS Recommendation: NFRAP Name:	State: CERCLIS GA GADO54: SESSMENT FORM CERCLIS Discovery 03/80 Formation Agency/Organization: Date Product O4/19 City: Stone Mtn. Agency Contact: Telephone: (404)347-5065 City: Atlanta (for EPA use only) CERCLIS Recommendation: NFRAP Name:

Page: 3

IDENTIFICATION POTENTIAL HAZARDOUS State: CERCLIS Number: WASTE SITE GAD054228432 GA CERCLIS Discovery Date: PRELIMINARY ASSESSMENT FORM 03/80 5. General Site Characteristics Predominant Land Uses Within Site Setting: Years of Operation: Beginning Year: 1971 1 Mile of Site: Industrial Urban Commercial Ending Year: 1993 Residential Type of Site Operations: Waste Generated: Manufacturing Onsite Plastic and/or Rubber Products Waste Deposition Authorized By: Present Owner Waste Accessible to the Public Distance to Nearest Dwelling, School, or Workplace: Feet 0 6. Waste Characteristics Information Source Type Quantity Tier General Types of Waste: Contaminated soil 5.00e+00 sq ft A Other: alcohols, acetates, inks Physical State of Waste as Deposited Liquid Tier Legend C = Constituent W = Wastestream V = Volume A = Area

Page: 4

DOMENIATA I IIA ZA DO	NIC .	ID	ENTIFICATI	ON		
POTENTIAL HAZARDO WASTE SITE	State: GA	State: CERCLIS Number GA GAD054228432				
PRELIMINARY ASSES	SSMENT FORM		Discovery 03/80	Date:		
7. Ground Water Pathway			-			
Is Ground Water Used for Drinking Water Within 4 Miles: No	Is There a Suspected Release to Ground Water: Yes	Population	ondary Tar on Served ater Withd	by		
Type of Ground Water Wells Within 4 Miles: None	Have Primary Target Drinking Water Wells Been Identified: No	0 - 1, >1/4 - 1, >1/2 - 1		o o o		
Depth to Shallowest Aquifer: 20 Feet			Miles Miles	0		
ZU reet Karst Terrain/Aquifer Present:	Nearest Designated Wellhead Protection Area:		Miles	0		
No	None within 4 Miles	Total		0		

Page: 5

IDENTIFICATION POTENTIAL HAZARDOUS State: CERCLIS Number: WASTE SITE GA GAD054228432 CERCLIS Discovery Date: PRELIMINARY ASSESSMENT FORM 03/80 8. Surface Water Pathway Part 1 of 4 Type of Surface Water Draining Shortest Overland Distance From Any Site and 15 Miles Downstream: Source to Surface Water: Other: 3000 Feet storm drains 0.6 Miles Is there a Suspected Release to Site is Located in: Surface Water: > 500 yr floodplain No 8. Surface Water Pathway Part 2 of 4 Drinking Water Intakes Along the Surface Water Migration Path: No Have Primary Target Drinking Water Intakes Been Identified: No Secondary Target Drinking Water Intakes: None

Page:

POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: GA CERCLIS Number: GAD054228432

CERCLIS Discovery Date:

03/80

8. Surface Water Pathway

Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: No

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:
None

8. Surface Water Pathway

Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) No Have Primary Target Wetlands Been Identified? (y/n) No Secondary Target Wetlands:

None

Other Sensitive Environments Along the Surface Water Migration Path: No

Have Primary Target Sensitive Environments Been Identified: No

Secondary Target Sensitive Environments:

None

Page: 7

POTENTIAL HAZARDOUS

WASTE SITE

State: GA CERCLIS Number: GAD054228432

PRELIMINARY ASSESSMENT FORM

CERCLIS Discovery Date:

IDENTIFICATION

03/80

9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination: No

Number of Workers Onsite: 1 - 100

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: No

10. Air Pathway

Total Population on o	or Within:	Is There a Suspected Release to Air: No
0 - 1/4 Mile >1/4 - 1/2 Mile >1/2 - 1 Mile >1 - 2 Miles	0 945 2593 16503	Wetlands Located Within 4 Miles of the Site: No
>2 - 2 Miles >2 - 3 Miles >3 - 4 Miles Total	27800 43972 91842	Other Sensitive Environments Located Within 4 Miles of the Site: No

Sensitive Environments Within 1/2 Mile of the Site: None

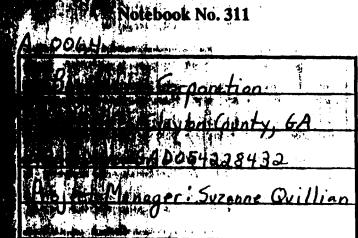


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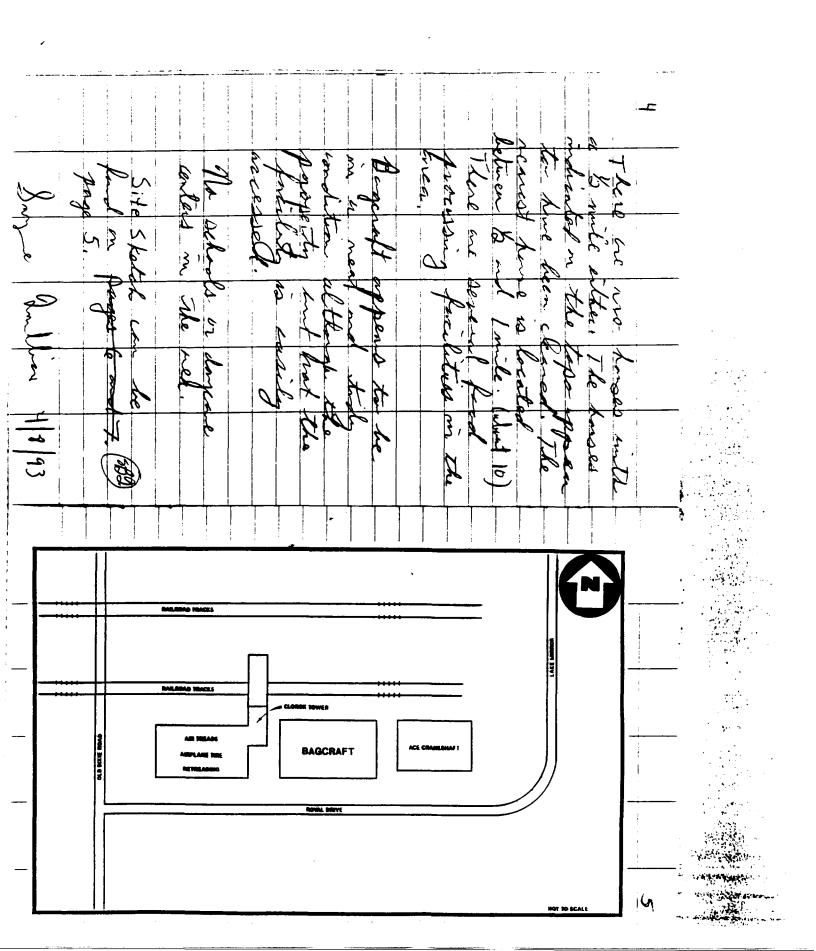
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J. L. DARLING CORPORATION TACOMA, WA 98421-3696 USA



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RCE . Environmental Science Services Administration . Environmental Data Service



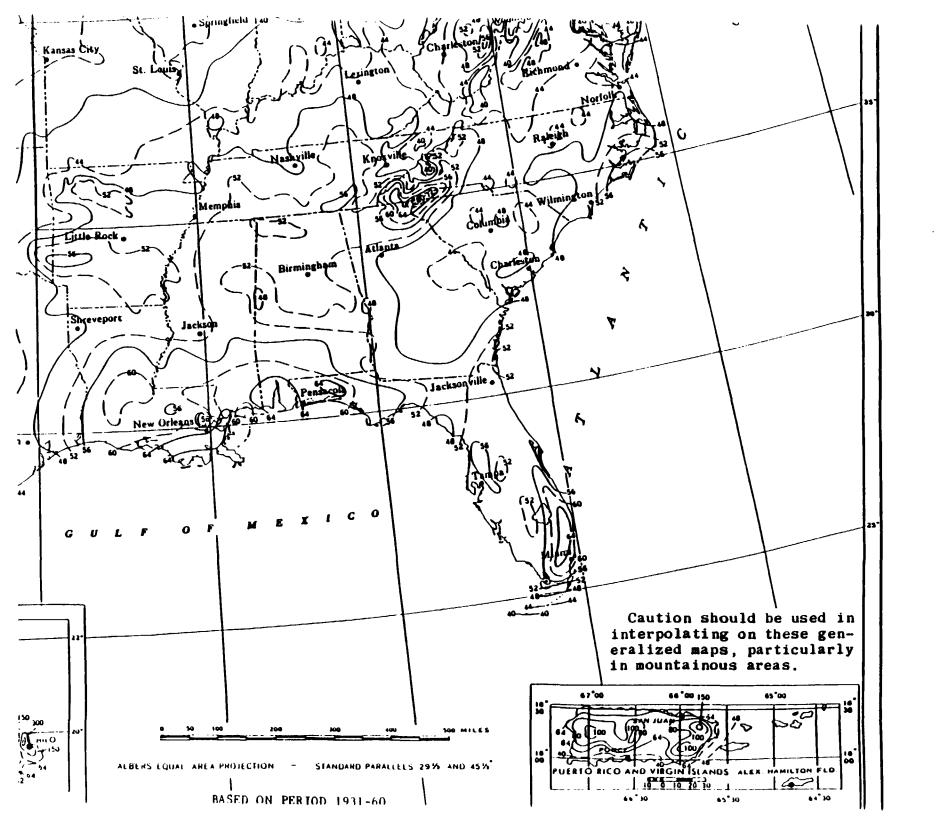
U.S. DEPARTMENT OF COMMERCE C. R. Smith, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION Robert M. White, Administrator

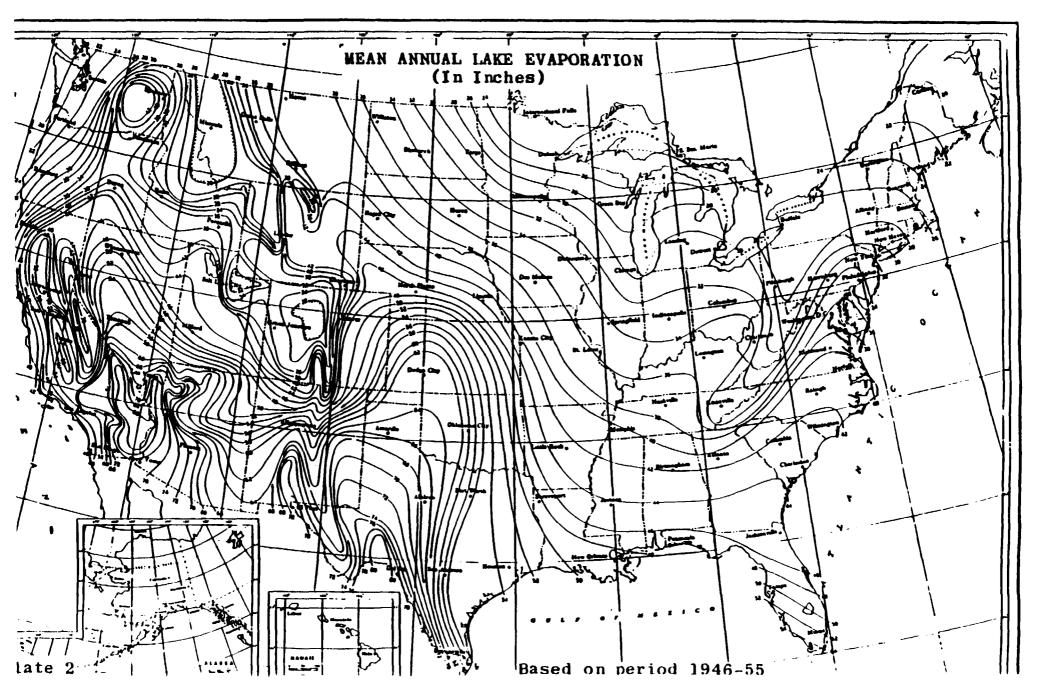
ENVIRONMENTAL DATA SERVICE Woodrow C. Jacobs, Director

JUNE 1968

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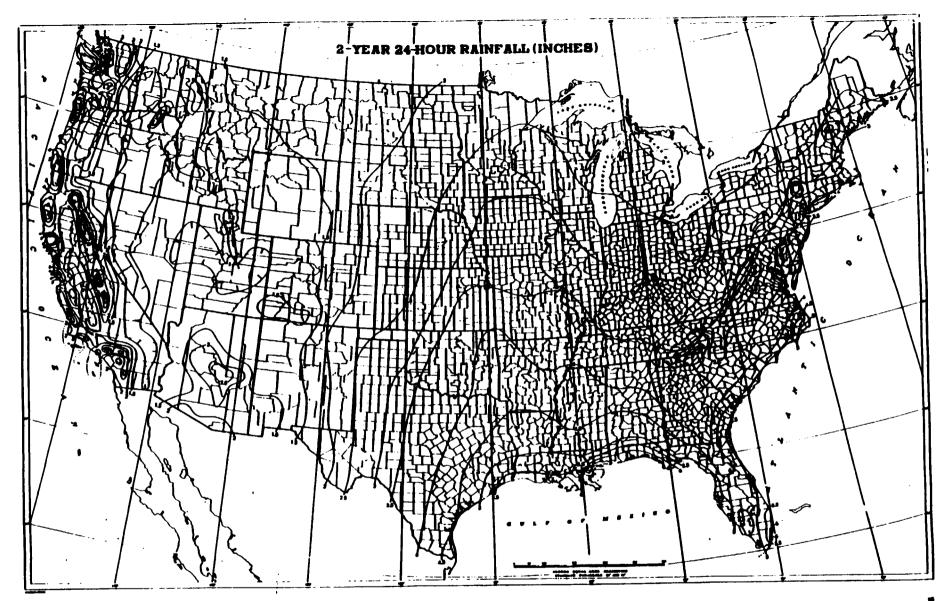
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Engineering Meldon, Sall Conservation Service



PROPERTY OF EPA FIT IV

REFERENCE



REFERENCE 5

HALLIBURTON NUS ENVIRONMENTAL CORPO	TELECON NOTE	
CONTROL NO.	DATE: 4/19/93	TIME: 1100
DISTRIBUTION:		
BETWEEN: Clerk	OF: Clayton County Tax Assessor's Office	PHONE: (404) 477-4566
AND: Suzanne Quillian		
Bagcraft Corporation of America 3900 W. 43rd Street Chicago, Illinois 60632 is the owner of the 1.3-acre prop County, Georgia 30050	perty occupied by Bagcraft Corporation at 18 R	Royal Drive, Forest Park, Clayton

GEORGIA MANUFACTURING DIRECTORY 1991-92



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Deborah D. Battle, Editor Arny Nease, Assistant Editor

ION COUNTY - CITY SECTION

Clayton County

						c.uy.c coc	, , ,
3277 3277 3259	Generator Sets Phone 404-960-1000 Fax 404-366-7710	BAGS BY FRANCES, INC. 4312 Old Jonesooro P O Box 217 30051 Date Est 1953 Market International F D O'Neal, Pres. 3713 3621 Chidren's Harts Chidren's Harts Milinery Phone 404-366-5940	2353 3171 2353	EVEREADY PLASTICS CO 5234 Jones Rd. P O. Box 584 30051 Date Est 1947 Market .National John V. Thornton, Pres. Custom Earpaces Phone 404-361-4840 Emp. 2M. GF. 2T.	3842	GREAT AMERICAN LEATHERWORKS 309 Monty Industrial BMd. P O. Box 20867, Atlanta 30320 Lades' Handbags Phone 404-361-3600 Fax 404-368-5818 Employment not available	3171
2431	Emp 3M 2F 11T Male Emp Ellenwood Female Emp Ellenwood Til Employed Ellenwood Forest Park (Pop. 16,925)	Fax 404-366-5969 Emp 3M 15F 18 2 BLANKENSHIP & WALKER PRINTING 720 Main St 30050 Date Est 1969 Market Local Debbie Walker, Owner Commercia Printing Phone 404-366-8063 Emp 0M 3F 6 CARGILL INC.	2759	FLORIDA ROCK INDUSTRIES, INC. 225 Lee s Mill Rd. 30050 Date Est 1968 Market. District Jacksonville. Florida Florida Rock Industries, Inc. Jacksonville. Florida Milke Bloebaum, Area Mgr Donald Weed, Sales Mgr Bill Haggerty, Supt. Sharon Adcox, Pur Crushed Stone Granie Stone	3281 3281	INTERNATIONAL FOOD SPECIALTIES 946 Main St. 30050 Date Est 1974 Markett. Netional M. E. Honerkamp, Gen. Mgr. Della Rivers, Plt. Mgr. Frozen Chie Frozen Chie Con Carnes Frozen Brunswick Stew Frozen Tarnese Phone 404-366-9310 Emp. 1M. 4F. 5T	2038 2038 2038 2038
2431 2431	APAC-GEORGIA INC MACDOUGALD-WARREN DV 195 Lee's Mill Rd P.O. Box 19695. Atlanta 30325 Date Est 1944 Market State 4 Atlanta. Georgia 4 Ashland. Georgia 4 Ashland. Kentucky Sam J. Tailev. Division Pres T.D. Batzei. V.P. Tom Lightcao, Sales Mgr. Asphatic Concrete Phone 404-766-5937 Emp. FM. 5.T.	71 Barnett Rd. 30050 Date Est 1976 Market: International I Minneronica, Minnesota Kevin Brotsma, Gen. Mgr. Dan Cox, Sales Mgr. Valene Newman, Pur. Agt. Allyd Resins Powester Resins Acritic Beads/Solutions Penne 404-363-4000 Fax. 404-363-4043	2851	Phone 404-766-8366 Emp 21M 4F 25T FONTAINE TRUCK EQUIP, CO. 5178 Old Dixie Hwy P O Box 278 30051 MarketRegional Birmingnam. Alabama The Marmon Group Chicago, Illinois Jeff Schwermer, Gen Mgr. Truck Bodies Trailers	3713 3715	INTERNATIONAL LEADBURNING CO. 5246 Jones Rd P O. Box 967 30051 Date Est 1973 MarketInternational lan M. Jones, Pres Ron McDonald, Mgr Metal Tanks & Fittings Plastic Tanks & Ductwork Lead Linings/X-Ray Protectors Prone 404-363-9065 Fax 404-361-7967 Emp 4M 0F 4T	3443 3089 3821
144	ALADDIN ENGINEERING CO. 82 Kenneov Dr P O. Box 1708 30051 Market Local Bob McCollum. Pres Metal Fabricanon Phone 404-361-6800 Emp 7M 22F 29T	CHAMBLEY PRINTING CO. 5483 Hillside Dr. 30050 Date Est 1973 Market Local Eugene Chambley, Pres. Commercial Printing Phone 404-766-9064 Emp. 2M OF 21 THE CLOROX CO.	275 2	Fifth Wheels Phone 404-363-9990 Fax 404-362-9065 Emp 18M 2F 20T FOREST PARK SHEET METAL WORKS P 0. Box 652 30051 Date Est 1951 Market. State M. Moscardell. Owner Sheet Metal Work	3714	KGA PRINTING 970 Main St. 30050 Date Est 1985 Market: Regional Ken Aderhold, Owner Commercial Offset Printing Typesetting Phone 404-363-2950 Emp. 3M 2F 5T	2752 2791
2	AMERICAN HOSE & HARDWARE, INC. 4987 Georgia Hwy 85 P.O. Box 191. Jonesboro 30236 Date Est 1978 Market Local Dean Smith, Gen Mgr Robert Waller, Sales Mgr Hydraulic Hose & Fittings Preument Hose/Fittings/Tubing Phone 404-763-1984 Fax 404-763-0224 Emp 3M 3F 11T	17 Lake Mirror Rd. P O Box 16749. Atlanta 30321 Date Est 1971 Market National Oakland, California The Clorox Co. Oakland, California W C. Castleberry, Pit Mgr. 3492 G T Paimer, Sales Oakland, California C R Strictler, Mgr of Buying Oakland, California Liqued Bleach Dry Bleach	2842 2842	Phone 404-766-6246 Fax 404-766-1214 Emp 11M 2F 13T GENERAL ENGINEERING SERVICE, INC. 5020 Dixie Hwy P O. Box 1303 30050 Date Est 1963 Market. International H C. Womack & T N Graves, C.E.O.'s H C. Womack, Sales Thomas J. Eagle, Pur Agt.		MACISON COATINGS (SOUTHEAST), II 5673 Old Dove Rd #160 Bldg R 3005 Date Est 1987 Market, Internscional * Madison Chemical Industries Toronto, Ont., Canade Alan Smith, Oprs. Mgr. Polyuretraine Coatings Phone 404-361-0646 Fax 404-363-3910 Emp 9M : 5F 14T-	2851
	AMERICAN NATIONAL CAN CO. 48 Royal Dr. 30050 Date Est 1960 Market. State 5 Chicago, Illinois 9 Pechiney SA Pans. France J W Klingseisen. Mgr.	All Purpose Cleaner Liquid Cleanser Phone 404-363-8300 Fax 404-361-6459 Emp 154M 69F 2231 COLLEGE PRESS/SIMPSON'S TYPOGI 4894 College St.		Aircraft Support Equipment Oil & Water Onling Equipment Machine Shop Job Work Missile Transportation Equip. Phone 404-366-0651 Fax 404-366-0657 Emp 30M 5F 35T	3812 3533 3599 3412	MCDANIEL MATTRESS CO. 5755 Old Doxe Hww 30050 Date Est 1925 Market. District E.M. Weir, C.E.O. Foam Rubber Mattresses Box Sonnigs Phone 404-523-8526 Emp. 11M. 4F. 15T.	2515 2515
	Pat Sullivan, Sales Mgr Atlanta, Georgia Dave Maki, Pur. Agt. Chicago, Illinois Beverage Cans Phone 404-361-2630 Emp. 185M. 2F. 187T.	P O. Box 1011 30050 Date Est 1967 Market. Local Harold B. Simpson, Pres. Commercial Printing Phone 404-366-4366 Emp 2M 2F 4T	<i>2759</i>	GRAMACK INDUSTRIES 5020 Old Dixie Hwy 30050 Market: National Clay Womack, Pres Memil Templeman, Sales Mark Johnson, Sales Rhonda Watson, Pur Agt Machine Shop-Face & Assembly	3 599	MERICO, INC. 273 Central Ave. P O Drawer D 30050 Date Est 1958 Market. Regional Campbel Taggart Dallas, Taxas Glenn Ward, V P	
	ATLANTA TARPAULINS 4686 Lake Mirror Pl 30050 Market National Jack Delagie, Pres Tarpauins Phone 404-361-2172 Emp	CROWN PRINTING CO. 4976 Phillips Dr. 30050 Date Est 1965 Market. Local J. Burtan. Pres Offset Job Printing Rased Printing Phone 404-366-9515 Emp. 3M. 5F. 8T	275 2 275 9	Tooling-Aircraft & Aerospace Ground Support Equip -Arlines Oil Field Educiment Phone 404-366-0651 Fax 404-366-0657 Emp DM OF 50T	3544 3537 3533	Terry Farrar, Sales Mgr. Richard Evans, Oprs. Mgr. Reingarand Biscusta & Rolls Phone 404-361-7211 Fax 404-361-9399 Emp 130M 110F 240T	2051
	BAGCRAFT CORP. OF AMERICA 18 Royal Dr 30050 Date Est 1971 Market International 8 Bagcraft Corp of America Chicago, Illinois Ronald E Leonard, C E O Flexible Packaging Material Phone 404-363-6116 Emp 25M 4F 29T	DAN-CO BAKERY, INC. 301 Monty Indus. Blvd. 30050 Date Est 1976 Market .National Benny Christensen, Pres Ernie Coppola, V.P. John W. MacEntyre, Pur. Agt. Balted Foods Phone 404-366-1650 Emp. 16M. SOF. 66T	2051	Platernalung	2791 2796 2759	MURPHY & ORR CO. 564 Main St. 30050 Date Est. 1946 MarketInternational Gerald A. Murphy, Pres. Exhibit Display Fixtures Portable Displays Commercial Millhorik Phone 404-366-2537 Fax. 404-366-2585 Emp. 33M. 4F. 37T.	2541 3993 2431

REFERENCE 7

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

REGION	SITE NUMBER (to	50	
	ed by Haj			
177)			

1. LU CA 00000 3000

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Tack Force (EN-335); 401 M St., SW; Washington, DC 20460. I. SITE IDENTIFICATION A. SITE NAME BAG CRAFT OORP S. STATE 4. CITY H. REALTY OWNER INFORMATION (if different from operator of site) 2. TELEPHONE NUMBER I. NAME 3. CITY 4. STATE S. ZIP CODE Narious J. TYPE OF OWNERSHIP 1. FEDERAL 2. STATE 3. COUNTY A. MUNICIPAL II. TENTATIVE DISPOSITION (complete this section last) A. ESTIMATE DATE OF TENTATIVE B. APPARENT SERIOUSNESS OF PROBLEM DISPOSITION (mq., day, & yr.) 4. NONE X 3. LOW 1. HIGH -- 2. MEDIUM 1. NAME David Brentzel 881-3016 III. INSPECTION INFORMATION A. PRINCIPAL INSPECTOR INFORMATION Chem Engl. Richard Tenassurlo 4. TELEPHONE NO. (eres code & no.) B. INSPECTION PARTICIPANTS 3. TELEPHONE NO. I. NAME Z. ORGANIZATION 181- 301G C. SITE REPRESENTATIVES INTERVIEWED (corporate officiale, workers, residente) 1. NAME 2. TITLE & TELEPHONE NO. S. ADDRESS

--- - ---

flotos- mulig while sustance

#2 Bin ink contaminant soil- stains

Continued From Page 2	برواري والمتعارب				
	IV. SAM	PLING INFORMA	ATION (continued)		
C. PHOTOS			U	Ű	hyl acetati-
1. TYPE OF PHOTOS		2. PHOTOS IN C	SUSTODY OF:		2 2
	AERIAL			ül	hylacetati- bout 40 Barrels of side of body
D. SITE MAPPED!			•		side of lady
YES. SPECIFY LOCATION	ON OF MAPS:	0			0 - 9
E. COORDINATES					
1. LATITUDE (degminsec.)		1	2. LONGITUDE (degmini-sec.)		
		V. SITE INFOR	MATION		
A. SITE STATUS		V. SITE INFOR	MATION		
1. ACTIVE (Those inductri mulmcipal sites which are being for wasie treatment, storage, of on a continuing basis, even if i quently.)	dused sites which no disposal wastes).	longer receive	(Those sites that include such where no regular or continuing that occurred.)		
B. IS GENERATOR ON SITE?					
1. NO 7 2. YES	(specify generator's four-	digit SIC Code):	·		
C. AREA OF SITE (in ecree)	D. ARE THERE	E BUILDINGS ON	THE SITE?		
		2. YES(spe			
One		7	,,		
	1/7 (4404	CTERITATION	OF SITE ACTIVITY		
Indicate the major site activity				ropri	ate boxes.
Y	lx'i	X.	, 	l x	1
A. TRANSPORTER	B. STOP		C. TREATER		D. DISPOSER
1. RAIL	1.PILE		1. FILTRATION		1. LANOFILL
2. SHIP	2. SURFACE IMPO	DUNDMENT	2. INCINERATION	_1	2. LANDFARM
3. BARGE	DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
4. TRUCK	TANK, ABOVE	GROUND	4.RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
S. PIPELINE	S. TANK, BELOW	GROUND	S. CHEM./PHYS./TREATMENT	-	S. MIDNIGHT DUMPING
6.OTHER(specify):	6. OTHER (apocily):	6. BIOLOGICAL TREATMENT		6. INCINERATION
	See.		7. WASTE OIL REPROCESSING		7. UNDEFGROUND INJECTION
	Jee		4. SOLVENT RECOVERY	\top	8. OTHER(specify):
	Section		9.OTHER(apecity):		•
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E. SUPPLEMENTAL REPORTS: which Supplemental Reports ye			s listed below, Supplemental Re	orts	nust be completed. Indicate
1. STORAGE	2. INCINERATION [3. LANDFILL	4. SURFACE	<u> </u>	DEEP WELL
6. CHEM/BIO/	7. LANDFARM	3. OPEN DUMP	9. TRANSPORTER	<u> </u>	. RECYCLOR/RECLAIMER
	VII. WA	STE RELATED	INFORMATION		
A. WASTE TYPE					
1. L1QUID	2. SOLID] 3. SLUDGE	4. GAS		
B. WASTE CHARACTERISTICS					
1. CORROSIVE	Talichitable C	7. 8.00	VE TA HANDY VALLEY =		
1= =	2. IGNITABLE	_ 3. RADIOACTI	=		
S. TOXIC	6. REACTIVE	7. INERT	8. FLAMMABLE		
<u></u>					!
C. WASTE CATEGORIES					
1. Are records of wester availab	le? Specify items such as	manifests, invent	ones, etc. below.		

Continued From Page 4		t	
	VIII. HAZARD DESCRIPTION (continued)		
B. NON-WORKER INJURY/EXPOSURE	`		
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i e			
C. WORKER INJURY/EXPOSURE	·		
			
O. CONTAMINATION OF WATER SUPPLY			
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E. CONTAMINATION OF FOOD CHAIN			
F. CONTAMINATION OF GROUND WATER			
		_	
G. CONTAMINATION OF SURFACE WATER			
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VIII. HAZARD DESCRIPTION (continued) N. FIRE OR EXPLOSION O. SPILLE/LEAXING CONTAINERE/RUHOTP/STANDING LIQUID P. SEWER, STORM DRAIN PROBLEMS O. EROSION PROBLEMS J. INAOEQUATE SECURITY J. INAOEQUATE SECURITY	Continued Prom Page 6			
O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID P. SENER. STORM DRAIN PROBLEMS O. EROSION PROBLEMS A. INADEQUATE SECURITY S. INCOMPATIBLE WASTES		VIII. HAZARD DESCRIPTION	(continued)	
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS R. INADEQUATE SECURITY S. INCOMPATIBLE WASTES	H. FIRE OR EXPLOSION			
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS R. INADEQUATE SECURITY S. INCOMPATIBLE WASTES				
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS R. INADEQUATE SECURITY S. INCOMPATIBLE WASTES				
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS B. INADEQUATE SECURITY S. INCOMPATIBLE WASTES				
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS R. INADEQUATE SECURITY				
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS R. INADEQUATE SECURITY				
P. SEWER, STORM DRAIN PROBLEMS Q. EROSION PROBLEMS B. INADEQUATE SECURITY S. INCOMPATIBLE WASTES				
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Continued From Page 8 X. WATER AND HYDROLOGICAL DATA (continued) H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE 4. NON-COM-MUNITY (mark 'X') COMMUN-ITY (mark 'X') 2. DEPTH (specify unit) 3. LOCATION (proximity to population/buildings) 1. WELL I. RECEIVING WATER I. NAME 2. SEWERS 3. STREAMS/RIVERS ___ 4. LAKES/RESERVOIRS S. OTHER(apecily): S. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS XI. SOIL AND VEGITATION DATA LOCATION OF SITE IS IN: C. 100 YEAR FLOOD PLAIR ... D. WETLAND B. KARST ZONE A. KNOWN FAULT ZONE G. RECHARGE ZONE ON SOLE SOURCE AQUIFER F. CRITICAL HABITAT E. A REGULATED FLOODWAY XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts. A. CVERBURDEN B. BEDROCK (apecify below) C. THER (epolity below) 1. SAND 2. CLAY 3. GRAVEL XIII. SOIL PERMEABILITY A. UNKNOWN B. VERY HIGH (100,000 to 1000 cm/sec.) . c. HIGH (1002 to 10 cm/sec.) D. MODERATE (10 to .1 cm/sec.) E. LOW (.1 to .001 cm/sec.) F. VERY LOW (.001 to .00001 cm/sec.) G. RECHARGE AREA 1. YES 2. NO 3. COMMENTS: H. DISCHARGE AREA 1. YES ___ 2. NO 3. COMMENTS: I. SLOPE 1. ESTIMATE % OF SLOPE 2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC. J. OTHER GEOLOGICAL DATA

REFERENCE 8 NUMBER: 1 91

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGIONIV

HAZARDOUS MATERIAL ENFORCEMENT AND RESPONSE PROGRAM

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ADDRESS OF CALL	<u></u>		···
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POTENTIAL HAZARDOUS WASTE SITE LCG

SITE NUMBER

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NOTE: The initial identification of a potential ation that an actual health or environmen waste Site Enforcement and Response Systems	ntal threat ex	ısts. All id	entified sites (will be as	sessed unde	er the EPA's	
SITE NAME Bag Craft	Car	10-				<u> </u>	
Front Park		∬ ST	61	A	2	P CODE	
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(TEM	DATE OF DETERMIN- ATION OR COMPLE- TION	RESPONS!	BLE ORGANIZA INDIVIDUAL 16, Contractor, C	1	PERSON ENT TO LOG	RY	DATE ENTERED ON LOG (mo,day,yr)
1. IDENTIFICATION OF POTENTIAL PROBLEM	3/26/80	EPA,	Fanazze	wb	Ferra	zul.	3/26/80
2. PRELIMINARY ASSESSMENT	4/15/80	EPA,	Fenan	rub	Fana	zub	#115/80
APPARENT SERIOUSNESS OF PROBLEM	1 <u> </u>	MEDIU	1 LOW	_ NON	E J	NOWN	, — —
3. SITE INSPECTION	4/15/80	EPA.	Fenas?	acto!	Fenas	zuols	4/13/80
4. EPA TENTATIVE DISPOSITION (check appropriate item(e) below)							. 1
a. NO ACTION NEEDED							
b. INVESTIGATIVE ACTION NEEDED							
c. REMEDIAL ACTION NEEDED							
d. ENFORCEMENT ACTION NEEDED							
5. EPA FINAL STRATEGY DETERMINATION (check appropriate item(e) below)					·		
a. NO ACTION NEEDED				_ 1			
b. REMEDIAL ACTION NEEDED							_
C. REMEDIAL ACTION NEEDED BUT,				$\Box \Box$			
d. ENFORCEMENT ACTION NEEDED							
(1) CASE DEVELOPMENT PLAN PREPARED					_		_
(2) ENFORCEMENT CASE FILED OR ADMINISTRATIVE ORDER ISSUED							
6. STRATEGY COMPLETED	:						

REFERENCE 9



POTE AL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

GION	SITE NUMBER	(10	•
\widehat{II}	eigned by Hgj		

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

	I. SITE IDEI	NTIFICATION	N	
ROC Galt C	m	B. STREET (or other	O DA	
c. city Forest Park	0	O. STATE E. Z	TIP CODE F. COU	A LO
G. OWNER/OPERATOR (II known) 1. NAME			2. TEL	EPHONE NUMBER
		- 1	ATE6 UNKNOW	
stre description fleit ols ground; into disposal	and metales.	stored in a	n tank leak	eing ante selegation
J. HOW IDENTIFIED (1.0., citizen'e comp	complaint			K. DATE IDENTIFIED (mo., day, &, yr.)
L. PRINCIPAL STATE CONTACT 1. NAME			2. TELE	EPHONE NUMBER
II.	PRELIMINARY ASSESSMEN	NT (complete this se	ection last)	
A. APPARENT SERIOUSNESS OF PROBL		s_unkno	DW::	
B. RECOMMENDATION 1. NO ACTION NEEDED (no hexaed)	ı		SITE INSPECTION NEI	
3. SITE INSPECTION NEEDED 3. TENTATIVELY SCHEDULED F	'OR:	b. WILL BE F	PERFORMED BY:	
b. WILL BE PERFORMED BY: R. Fencessu D. Rama	No.	4. SITE INSPE	CTION NEEDED (low pa	niority)
C. PREPARER INFORMATION J	wolo	· 2. TELEPHON	е number 57 - dd34	12. DATE (MO., day, & yr.) 4/15/80
	III. SITE INI	FORMATION		
A. SITE STATUS 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intro-quently.)	2. INACTIVE (Those slice which no longer receive wasies,)	3. OTHER (spec (Those sites that inc no regular or continu	lude such incidents like	s ''midnight dumping'' where ease disposal has occurred.)
B. IS GENERATOR ON SITE?	2. YES (epecify gener			
C. AREA OF SITE (in acres)	D. IF APPARENT SERIOUSNE 1. LATITUDE (degmineec.		SPECIFY COORDINAT	ES .min.—eec.)
E. ARE THERE BUILDINGS ON THE SITE			1	

100	licate the major sit	e activity	ies) and	d details	s relating to each a	cti	vity by marking 'X'	in t	p. Ab	ropt	inte boxe	s.	
Ě	A. TRANSPOR	TER	X		TOPER	×	C. TREATE	R	1	. x ·		D. (DISPOSER
	1. RAIL		1 P	PILE			1. FILTRATION				. LANDE	1	
┝╼┥	2. \$HIP		2. 51	UNFACE	E IMPOUNDMENT	_	2. INCINERATION				LANDE	ARN	•
\vdash	3. BARGE		X 3. E	RUMS		_	3. VOLUME REDUCT	101			D. OPEN D	DUMP	
\vdash	4. TRUCK		 - - 		OVE GROUND		4. RECYCLING/REC			_	SURFAC	CE IMPOUNDMENT	
\vdash	S. PIPELINE		 		LOW GROUND		S. CHEMI/PHYS. TRI	EAT	ATMENT 5 MIDNIG		MIDNIG	- T	DUMPING
لــا	6. OTHER (specify):		⊷°،	THER (ipecily):	-+	6. BIOLOGICAL TRE			\rightarrow	INCINE		
					1	_	7. WASTE OIL REPR) C E	551NG		UNDER	GRO	NOITSELNI ONU
					ļ	-+	8. SOLVENT RECOV	ERY			. OTHER	(* P •	rcify):
					 	_	9. OTHER (specify):		- 1				
									-				
Storage area in back on left hand side; runolif from property													
							·				<u>:</u>		
۸.	WASTE TYPE				V. WASTE RELAT	<u> </u>	INFURMATION						
]1 UNKNOWN }	5 FIGUID	i	<u></u> 3. sc	OLID 4. S	LU	DGE5. G	AS					
8.	WASTE CHARACTE												
<u> </u>	_	_		3. IG	NITABLE4 R	AD	IOACTIVE5 H	I G H	ILY VO	LAT	ILE		
	6. TOXIC	7 REACTI	VE	8 IN	ERT9 F	LA	MMABLE				•		
]10. OTHER (specif	y):											
	MASTE CATEGORIE		2 Specif	fy items	such as manifests, in		stories, etc. helow.						
•				,									į
							·						
_2.	Estimate the amou	unt(specify	unit of	í measui	re)of waste by cate	go	ry; mark 'X' to indic	ste	which	was	stes are p	res	ent.
	. SLUDGE	ь. с	DIL.		c. SOLVENTS	1_	d. CHEMICALS	↓_	e. 5	OLI	DS	_	f. OTHER
AMC	OUNT .	AMOUNT		^_	TAUOI	^^	MOUNT	^^	POUNT			 ^M	OUNT
UNI	T OF MEASURE	UNIT OF MI	EASURE	E UN	IT OF MEASURE	L	IT OF MEASURE	LUN	IT OF	MEA	SURE	UN	IT OF MEASURE
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J. I		X' (1) OII Y		- ,_,					r				
۲	1) PAINT, PIGMENTS	A (I) OIL Y		. X.	SOLVENTS	ř	(1) ACIDS	Ě	HFLY	ASF	1	H	11) PHARMACEUT.
٦.						1-	10.5.0					H	•
ľ	2)METALS SLUDGES	L(2)01H	ER(spec	,	(2) NON-HALOGNED SOLVENTS	1	LIQUORS		(21 ASB	E 5 1	·O5		12) HOSPITAL
ı	3) POTW			P	(3) OTHER(specify):	Γ	(3) CAUSTICS	MINE TAILINGS					(3) RADIQACTIVE
7	4) A LUMINUM SLUDGE						(4) PESTICIDES		(4) FER		US WASTES		(4) MUNICIPAL
	5) OTHER(*pecily):					X	(8) DYES/INKS		(5) NON	1-FE	RROUS WASTES		(5) OTHER(specify):
•					•	r	(6) CYANIDE	H			*pecify):		
				-		<u> </u>	(7) PHENOLS						
						\vdash	(8) HALOGENS						
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				1		-							
					į.	L	(10) METALS						Ì
				Į	·		(11) OTHER (opecity)	4	-		1		
	l					0	elcohols, ac	Λo	صاكمة)			1

			ED INFORMATION			
3. LIST SUBSTANCES OF GREATES	ST CONCL	WHICH MAY	BE ON THE SITE (place in descendir	ler of hezerd).	
inks						
acetone						
inks actone alcohols						
	····				·	
4. ADDITIONAL COMMENTS OR NA	RRATIVE DE	SCRIPTION O	F SITUATION KNO		TO EXIST AT THE SITE.	
		VI. HAZ	ARD DESCRIPT	ION	· · · · · · · · · · · · · · · · · · ·	
A. TYPE OF HAZARD	B. POTEN- TIAL HAZARD (merk 'X')	C. #:.LEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo.,day,yr.)		E. REMARKS	
. NO HAZARD	ļ					
. HUMAN HEALTH					•	
NON-WORKER INJURY/EXPOSURE						· · · · · · · · · · · · · · · · · · ·
. WORKER INJURY						
CONTAMINATION OF WATER SUPPLY			· · · · · · · · · · · · · · · · · · ·			
CONTAMINATION OF FOOD CHAIN						
CONTAMINATION OF GROUND WATER						
CONTAMINATION OF SURFACE WATER						• .
DAMAGE TO FLORA/FAUNA						
). FISH KILL			•			
CONTAMINATION OF AIR			· · · · · · · · · · · · · · · · · · ·			
NOTICEABLE ODORS			· · · · · · · · · · · · · · · · · · ·			
. CONTAMINATION OF SOIL		X				
I. PROPERTY DAMAGE			·			
S. FIRE OR EXPLOSION					<u></u>	
SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS		\times	•			
SEWER, STORM DRAIN PROBLEMS						
I. EROSION PROBLEMS						
. INADEQUATE SECURITY						
, INCOMPATIBLE WASTES		·				
. MIDNIGHT DUMPING						
. OTHER (specify):						
•	ŀ					

			VII. PERMIT INFO	DRMATION
A. INDICATE ALL APPLI	CABLE PER	MITS HEL YT	HE SITE.	
_		_		•
1. NPDES PERMIT	2. SPC	C PLAN	3. STATE PERMIT	(specify):
4. AIR PERMITS	5. LO	CAL PERMIT] 6. RCRA TRANSPO	DRTER
7. RCRA STORER	8. RCF	RA TREATER	9 RCRA DISPOSER	A ·
B. IN COMPLIANCE?	<u> -</u>			
1. YES	2. NO		3. UNKNOWN	
			.	
4. WITH RESPECT T	(list regul	ation name & numb	er):	
		VIII.	PAST REGULATO	RY ACTIONS
A. NONE	☐ B. YE	S (summerize belo		
·			•	
				•
l				•
		IY INSPE	CTION ACTIVITY	***** ********************************
		IA. II.	CHOR ACTIVITY	(past or on-poing)
A. NONE	B. YES	(complete items 1	,2,2, & 4 below)	
1. TYPE OF ACT'V	"TY	2 DATE OF PAST ACTION (mo., day, & yr.)	3 PERFORMED BY: (EPA/State)	4. DESCRIPTION
				
				·
		X. REA	MEDIAL ACTIVITY	(past or on-going)
A. NONE	B. YES	(complete items 1		
1. TYPE OF ACTIV	/ITY	2. DATE (-F PAST ACTION (mo., day, & vr.)	3. PERFORMED BY: (EPA/State)	. 4. DESCRIPTION
		(mo., day, & yr.)	(EPA/Siele)	
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1		n in Sections II	_	out the Preliminary Assessment (Section II)

EPA Form T2070-2 (10-79)

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	POTENTIAL	L HAZARDOUS-WA	STE SITE		RE	GIONIS	SITE NUMBER		
MILE IN	FINAL STR	RATEGY DETERM	MOITANIM	· 	14	<u> Y</u>			
	regional Hazardous Waste Lo aste Enforcement Task Ford						n Agency; Site	Tracking	
NA NA		I. SITE IDENT							
A. SITE NAME	Soft Cong	D	B. STREET	Ros	al	DA			
c. city For	rest Park		D. STATE	6f) U		-	E. ZIP CODE		
Indicate the recommer	nded action(s) and agency(ie	II. FINAL DETE			n the app	conriate	haves.		
	RECOMMENDATION		MITO	MARK'X'	EPA		ION AGENCY	PRIVATE	
A. NO ACTION NEEDED	D			X		-			
B. REMEDIAL ACTION (If yes, complete Sect	NEEDED, BUT NO RESOURCE	ES AVAILABLE							
C. REMEDIAL ACTION	(If yes, complete Section IV.)								
	TION (If yes, specify in Pert E or the State and what type of e		ill be primarily anticipated.)						
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THE DATE PREPARE	PMENT PLAN HAS BEEN PRE RED (mo., day, & yr.)	EPARED, SPECIFY		FORCLMENT ED (mo., day		S BEEN	FILED, SPECI	FY THE	
1. NAME	Fencycol	D	F/S	ONE NUMBER	- 223	4 '	3. DATE (MO., de 4-/16/8	9y, & yr.)	
	III. REMEDIAL ACTIONS								
	ons, such as excavation, ren s for each of the actions to I								
A. REMED	DIAL ACTION	B. ESTIMATE	ED COST		С	. REMAR	RKS		
		s							
		\$							
	s s								
	<u> </u>	s '							
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		\$							
<u> </u>		s				· · · · · · · · · · · · · · · · · · ·	•		
·		s							
D. TOTAL ESTIMATED (COST S		1						

Continued From Front					
		IV.	. REMEDIAL ACT	IONS	
	strict access, p	provide alter			en or planned to bring the site under for a list of Key Words for each of
1. ACTION	2. ACTION START DATE (mo.dey.&yr)	3. ACTION END DATE (mo,day,&yr)	4, ACTION AGENCY (EPA, State,) Private Party)	5. COST	6. SPECIFY 311 OR OTHER ACTION: INDICATE THE MAGNITUDE OF THE WORK REQUIRED.
				s	
				s	
				s	
				s	
				s	·
				s	,
B. LONG TERM STRATEGY (6 wells, etc. See instruction					n, removal, ground water monitoring paces below.
1. ACTION	2. ACTION START DATE	3. ACTION END DATE (mo,day,&yr)	4. ACTION AGENCY (EPA, State		6. SPECIFY 311 OR OTHER ACTION: INDICATE THE MAGNITUDE OF THE WORK REQUIRED.
				s	
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				s	
C. MANHOURS AND COST BY	ACTION AGE	NCY			
1. AC	CTION AGENCY			2. TOTAL MAN- HOURS FOR REMEDIAL ACTIVITIES	3. TOTAL COST FOR REMEDIAL ACTIVITIES
å, EPA					s

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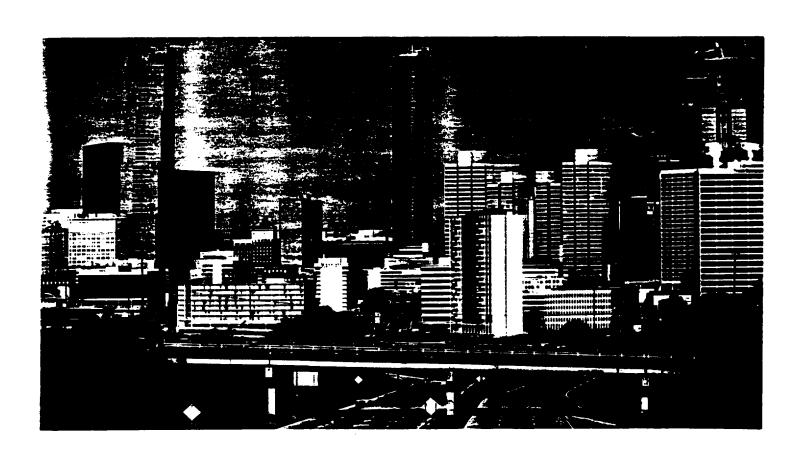
EPA Form T2070-5 (10-79) REVERSE

d. OTHER (specify):

REFERENCE 11

GEOLOGY OF THE GREATER ATLANTA REGION

Keith I. McConnell and Charlotte E. Abrams



Department of Natural Resources J. Leonard Ledbetter, Commissioner

Environmental Protection Division Harold F. Reheis, Assistant Director

Georgia Geologic Survey William H. McLemore, State Geologist

> Atlanta 1984

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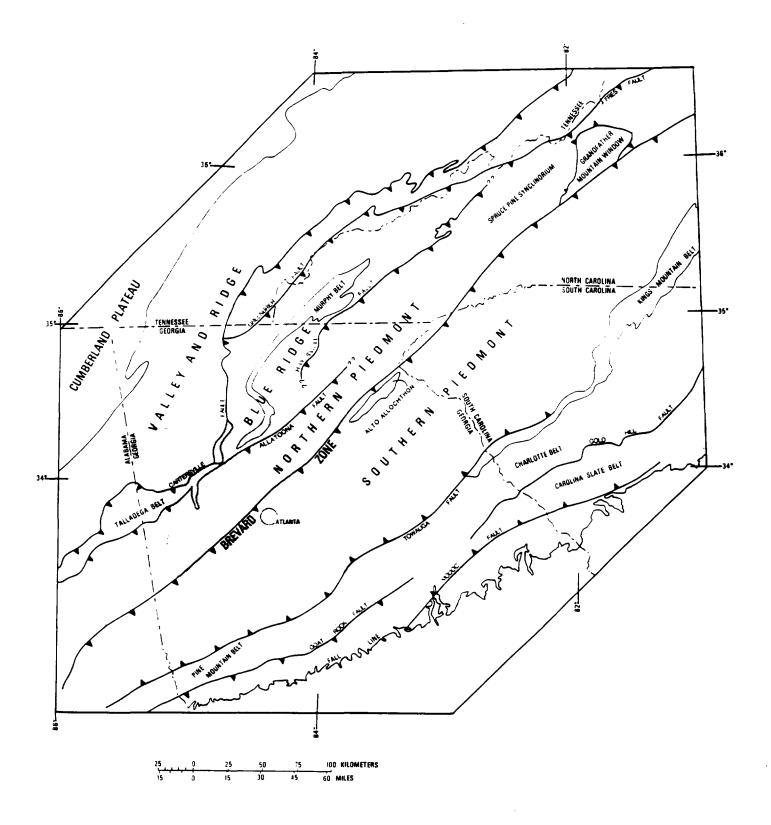


Figure 2. Regional location map showing boundaries of the Greater Atlanta Regional Map and regional setting of map area (modified after McConnell and Costello, 1982).

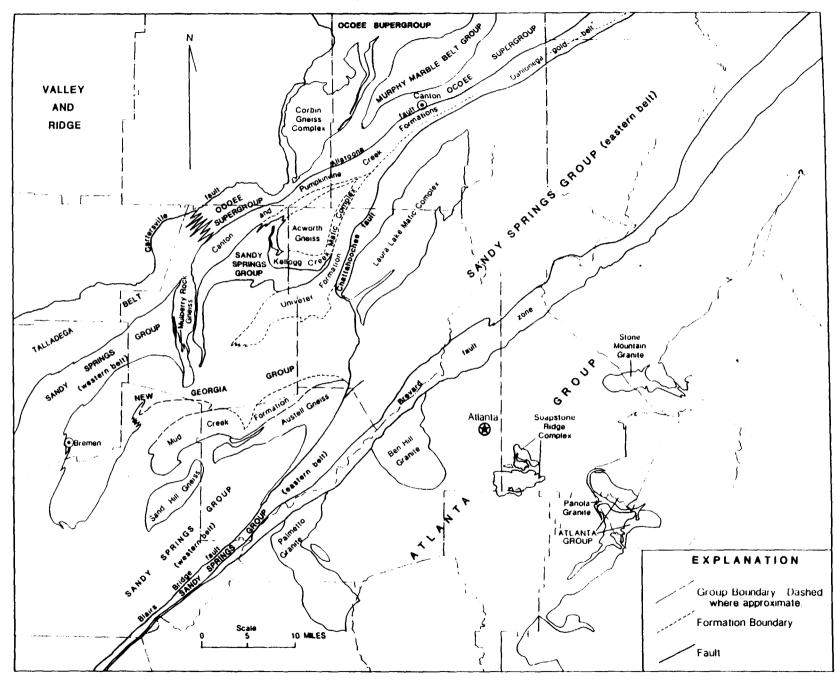


Figure 11. Group and formation boundaries of the crystalline rocks of the Greater Atlanta Regional Map.

Stratigraphic control is another aspect to the Brevard fault zone. Hatcher (1975, 1978a) indicated that the Brevard fault zone was stratigraphically controlled for at least part of its length and is bordered by several equivalent rock units (i.e., Heard group. Sandy Springs Group, Tallulah Falls Formation. Ashe Formation) for most of its length. In the Greater Atlanta Regional Map area, the stratigraphic distinction is not as clear as it is to the northeast. Although the Sandy Springs Group is present along the northwestern boundary of the Brevard zone in the Greater Atlanta Region, the absence of units defined as Chauga River Formation (Hatcher, 1969) south of Flowery Branch complicates the issue of stratigraphic control of the Brevard zone. In this area. rocks of the Sandy Springs Group occur on both sides of the Brevard fault zone (Kline, 1980, 1981). However, the Wolf Creek Formation (Higgins and Atkins, 1981), a unit composed of thinly laminated amphibolite interlayered with "button" schist, is lithologically and texturally similar to and in the same relative tectonic position as the Poor Mountain Formation in northeastern Georgia where the Poor Mountain Formation borders on the Alto Allochthon (Hatcher, 1978b). The Wolf Creek Formation may represent the lithostratigraphic equivalent of a portion of the Poor Mountain Formation and the stratigraphic association of the Brevard fault zone readily apparent to the northeast would be present at least as far southwest as Atlanta. A speculative extension of this correlation would be that the rocks exposed in the Newnan-Tucker synform may represent another allochthon resting on Poor Mountain Formation equivalents.

SOUTHERN PIEDMONT

In the recent past, the so-called "belt" terminology or geographic separation of rocks (i.e., northern and southern) was criticized for its ambiguity and in some cases its inapplicability (Crawford and Medlin. 1970; Medlin and Crawford, 1973; McConnell, 1980b). However, no suitable replacement was proposed to enable geographic placement of various rock sequences within the regional geologic framework. In the Atlanta area, rock sequences north of the Brevard fault zone were redefined by one set of workers (McConnell and Costello. 1980b: Abrams and McConnell, 1981a: McConnell and Abrams, 1982a, 1982b; this report), while south of the Brevard, another set of workers has redefined stratigraphic relationships (Atkins and Higgins, 1980; Higgins and Atkins, 1981). Although similar rocks and stratigraphic sequences exist on both sides of the Brevard zone. little effort has gone into relating the two areas. Thus, the geologic distinction between rocks on either side of the Brevard zone is more apparent than real.

Atlanta Group

Studies of stratigraphic relationships within that portion of the Greater Atlanta Regional Map southeast of the Brevard zone generally are limited to two reports (Atkins and Higgins. 1980: Higgins and Atkins. 1981). These reports define a stratigraphic succession of rocks (Atlanta Group, Fig. 11) that occurs in either a synformal anticline or a synformal syncline (Higgins and Atkins. 1981). Higgins and Atkins (1981) interpret this structure as a syncline, but indicate that the stratigraphic sequence they propose is inverted if the alternative hypothesis is correct. Many rock units defined by Higgins

and Atkins (1981) are lithologically similar to units defined northwest of the Brevard fault zone (Appendix A gives a brief description of all rock units in the Greater Atlanta Regional Map south of the Brevard fault zone). In the Atlanta area, Kline (1980, 1981) and McConnell (1980b) indicated that rocks of the Sandy Springs Group are present on both sides of the Brevard fault zone. This is consistent with observations farther northeast (Hatcher, 1978b), as well as those related to this report (Plate Ia). The recognition that similar rock sequences exist on both sides of the Brevard zone opens the way for a reinterpretation of stratigraphic relationships within Higgins and Atkins' (1981) Atlanta Group using age and structural relationships established north of the Brevard zone. Rocks northwest of the Brevard zone can serve as a guide for stratigraphic interpretation because of the nonconformable relationship between Grenville basement and Sandy Springs Group equivalent Tallulah Falls Formation in northeastern Georgia (Hatcher, 1974, 1977). Therefore, some indication of stratigraphic "up" is available northwest of the Brevard zone. Comparing mineralogical characteristics of some units in the Atlanta Group with those defined in the northern Piedmont also allows for the reinterpretation of the origin of several rock units defined by Higgins and Atkins (1981), in particular, the Intrenchment Creek Quartzite. The Intrenchment Creek Quartzite is defined as a spessartine-bearing quartzite (coticule rock) and mica schist unit that is composed locally of 15 to 30 percent spessartine garnet and 70 to 85 percent quartz (Higgins and Atkins, 1981). The chemical composition of this rock is attributed to be the result of "halmyrolytic alteration" of oceanic sediments associated with mafic volcanic rocks by Higgins and Atkins (1981, pg. 20). However, spessartinebearing quartzites are common in the predominantly volcanogenic New Georgia Group northwest of the Brevard zone and in volcanogenic sequences elsewhere (John Slack, personal commun., 1982). In the New Georgia Group spessartine quartzites are associated with banded iron formation. In addition, manganiferous quartzites are a facies of banded iron formation in the Draketown area and contain up to 53 percent manganese (Abrams and McConnell, unpublished data). We suggest that a more likely origin for the Intrenchment Creek Quartzite is derivation from exhalative processes and deposition as a siliceous chemical sediment within a volcanic terrain. The aluminous nature of the quartzite may suggest inclusion of a clay fraction (Abrams and McConnell, 1982b). The presence of garnet facies iron formation in association with mafic and felsic volcanics (i.e., Camp Creek and Big Cotton Indian Creek Formations: Higgins and Atkins, 1981) southeast of the Brevard fault zone is similar to relationships observed in the New Georgia Group northwest of the Brevard zone. The fact that similar stratigraphic sequences are present on both sides of the Brevard zone (Hatcher, 1972, 1978b; Crawford and Medlin, 1973; Kline, 1980, 1981; McConnell. 1980b) and that lithologic similarities exist between the New Georgia Group and the Intrenchment Creek Quartzite, Camp Creek Formation, Big Cotton Indian Creek sequence suggest that they formed in similar environments, possibly contemporaneously. If the above-mentioned stratigraphic sequences are coeval, a basis for reinterpreting the character of the Newnan-Tucker synform (Higgins and Atkins, 1981) exists. In this report, the Camp Creek Formation, Big Cotton Indian Creek Formation and Intrenchment Creek Quartzite

are interpreted as the oldest units in the Atlanta Group (analogous to the New Georgia Group northwest of the Brevard fault zone) and the Newnan-Tucker synform, therefore, is a synformal anticline with stratigraphically younger units occurring on limbs of the structure (Plate I). Sandy Springs Group rocks and their probable equivalents 1 in the Atlanta Group (Table 11. Plate Ib) are present on the limbs of the synform and stratigraphically overlie New Georgia Group equivalents (Plate I).

We also suggest that the relationship of Snellville Formation rocks to the Lithonia Gneiss is more likely a fault than an unconformity as previously suggested by Atkins and Higgins (1980). Atkins and Higgins (1980) interpreted this contact as an unconformity, but also gave evidence for characterizing this contact as a fault. This bulletin favors the latter interpretation of this contact primarily because of evidence cited by Atkins and Higgins (1980). Also, the "unconformity" interpretation requires a second Paleozoic metamorphic event for which, in the Greater Atlanta Region, there is a lack of strong evidence. However, due to a lack of detailed mapping in the area by the authors of this bulletin, the contact is expressed as a stratigraphic contact on Plate I.

Outside of the area mapped by Higgins and Atkins (1981) little to no data are available for compilation. Information that does exist is in the form of open-file maps. Other areas (i.e., the easternmost part of the Greater Atlanta Regional Map) where no detailed data are available for compilation are left blank

(Plate I). Open-file mapping of Crawford and Medlin (Georgia Geologic Survey, 1976) was used in the southwesternmost portion of the Greater Atlanta Regional Map.

Regional Correlations

The similarity between rock units and stratigraphic sequences across the Brevard fault zone was previously discussed in this and previous reports (Crawford and Medlin, 1973: Hatcher, 1972, 1978b). In general, correlatives of the Sandy Springs and New Georgia Groups are believed to occur southeast of the Brevard fault zone in rocks defined as Atlanta Group. We speculate that, although complicated by intrusion of late Paleozoic plutons and the presence of large migmatitic terranes such as the Lithonia Gneiss, rocks defined as Atlanta Group by Higgins and Atkins (1981) probably were deposited in similar environments and had similar provenance to the New Georgia and Sandy Springs Group rocks. Therefore, correlations made in a previous section for rocks of the New Georgia and Sandy Springs Groups (i.e., equivalent to Ashe Formation) may be applicable for rocks of the Atlanta Group.

PLUTONIC ROCKS

Post Grenville-age intrusive rocks generally are limited to the Piedmont portion of the Greater Atlanta Region, although numerous pegmatites occur in the Blue Ridge (Galpin, 1915). In the Greater Atlanta Regional Map area, plutons of known Grenville and possibly older age are restricted to the Corbin Gneiss Complex east of a Cartersville in the Blue Ridge province (Fig. 4) where a 1,000-m.y.-old, coarse, megacrystic facies crosscuts a metasedimentary precursor (Costello, 1978; McConnell and Costello, 1984).

Table 11. Proposed correlation chart of northern and southern Piedmont lithologic units.

	ta Group gins and Atkins, 1981	Sandy Springs and New Georgia Groups this paper	
	Norris Lake Schist	Factory Shoals Formation	
Snellville Formation	Lanier Mountain Quartzite Member	Chattahoochee Palisades Quartzite	
nman Yard Formation	Promised Land Formation		
Norcross Gneiss	Wolf Creek Formation		
Clairmont Formation	Senoia Formation		
Wahoo Creek Formation		Powers Ferry Formation Undifferentiated	
Stonewall	Formation		
Clarkston Formation	Fairburn Member		
	Tar Creek Member		
Big Cotton Indian Formation	Intrenchment Creek Quartzite	New Coorge Group	
Camp Creek Formation		New Georgia Group	

¹ Lithologic descriptions of rocks in the Wolf Creek Formation. Norcross Gneiss and, in part, the Promised Land Formation (Atkins and Higgins, 1980) resemble lithologies in the New Georgia Group and may represent New Georgia equivalents. This correlation would require that other members of the Atlanta Group be part of an allochthonous sheet resting on the Wolf Creek Formation, etc. as was previously proposed in the Brevard Fault Zone section.

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ag	Austell Gneiss (Abrams and McConnell, 1981a: Abrams, 1983): fine-to
	coarse-grained blastoporphyritic to nonporphyritic orthogneiss composed of muscovite, biotite, oligoclase, quartz and microcline.

Sand Hill Gneiss (this report): fine- to coarse-grained blastoporphyritic to nonporphyritic orthogneiss composed of muscovite, biotite, oligoclase, quartz and microcline. Generally contains more muscovite, quartz and plagioclase and less microcline than Austell Gneiss.

Mulberry Rock Gneiss (this report): medium-grained, equigranular muscovite-quartz-microcline-plagioclase orthogneiss.

d Diabase dikes

SOUTHERN PIEDMONT PROVINCE AND BREVARD FAULT ZONE

Atlanta Group (late Precambrian to early Paleozoic) (stratigraphic order revised after Higgins and Atkins. 1981):

Camp Creek	Formation (Higgins and Atkins, 1981): massive	
granite gneiss	interlayered with thin, fine-grained, dark-green	
hornblende-pla	gioclase amphibolite.	

Intrenchment Creek Quartzite (Higgins and Atkins. 1981): spessartine quartzite and spessartine-mica schist interpreted in this report to be banded iron formation.

Big Cotton Indian Formation (Higgins and Atkins, 1981): intercalated biotite-plagioclase gneiss (locally porphyritic), hornblendeplagioclase amphibolite, and biotite-muscovite schist.

Clarkston Formation (Higgins and Atkins, 1981): sillimanite-garnet-quartz-plagioclase-biotite-muscovite schist interlayered with hornblende-plagioclase amphibolite (ca). Includes a unit composed only of schist termed the Fairburn Member (f); and a unit similar to Clarkston undifferentiated termed the Tar Creek Member (tc).

Stonewall Formation (Higgins and Atkins, 1981): intercalated fine-grained biotite gneiss, hornblende-plagioclase amphibolite and sillimanite-biotite schist.

Wahoo Creek Formation (Higgins and Atkins, 1981): includes slabby, medium-grained muscovite-plagioclase-quartz gneiss, amphibolite, mica schist and epidote-calcite-diopside gneiss (calc-silicate).

Senoia Formation (Atkins and Higgins, 1981): garnet-biotite-muscovite schist interlayered with fine-grained amphibolite, local thin layers of spessartine quartzite (iron formation?), sillimanite schist and biotite gneiss.

Clairmont Formation (Higgins and Atkins, 1981): interlayered medium-grained biotite-plagioclase gneiss and fine- to medium-grained hornblende-plagioclase amphibolite.

Promised Land Formation (Higgins and Atkins, 1981): includes massive to thinly layered, medium-grained, gray, banded biotite granite gneiss interlayered with fine-grained, dark-green to greenish black, blocky amphibolite. A thin quartzite and muscovite quartz schist unit near top of the Promised Land Formation is termed the Hannah Member (h).

Wolf Creek Formation (Higgins and Atkins, 1981): thinly laminated, fine-grained amphibolite interlayered with lustrous, silvery, gray, biotite-muscovite schist.

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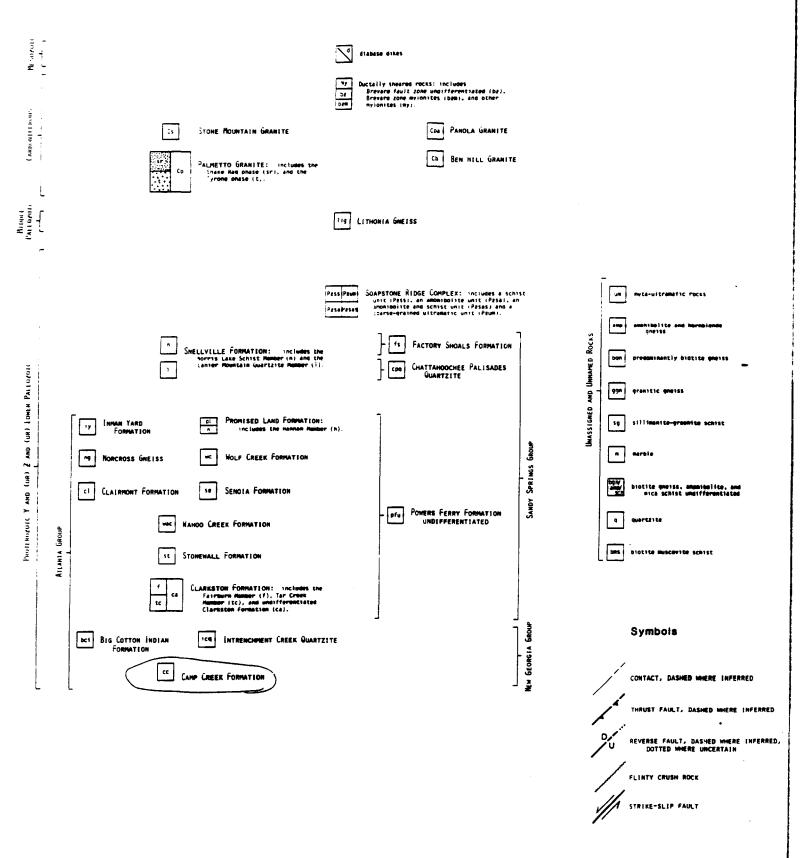
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Southern Piedmont and Brevard Fault Zone

modified after Atkins and Higgins, 1980; and Kline, 1981)



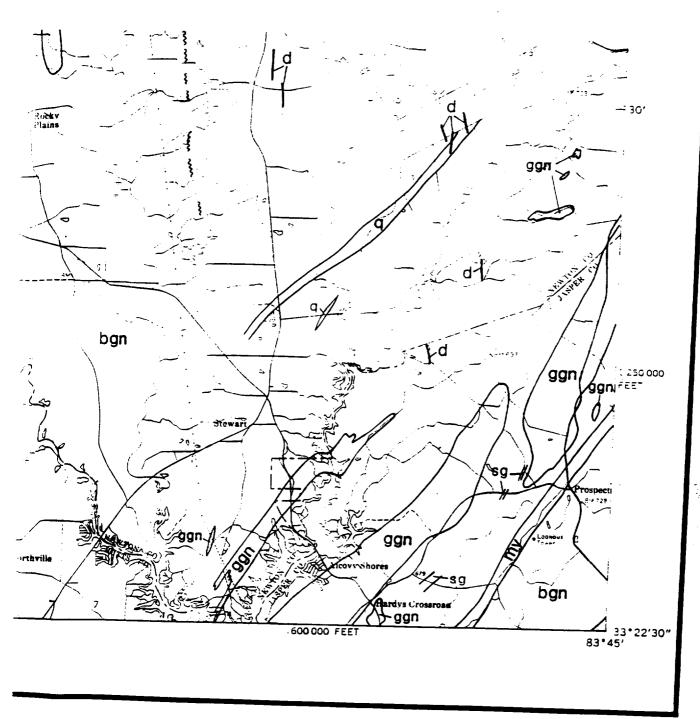
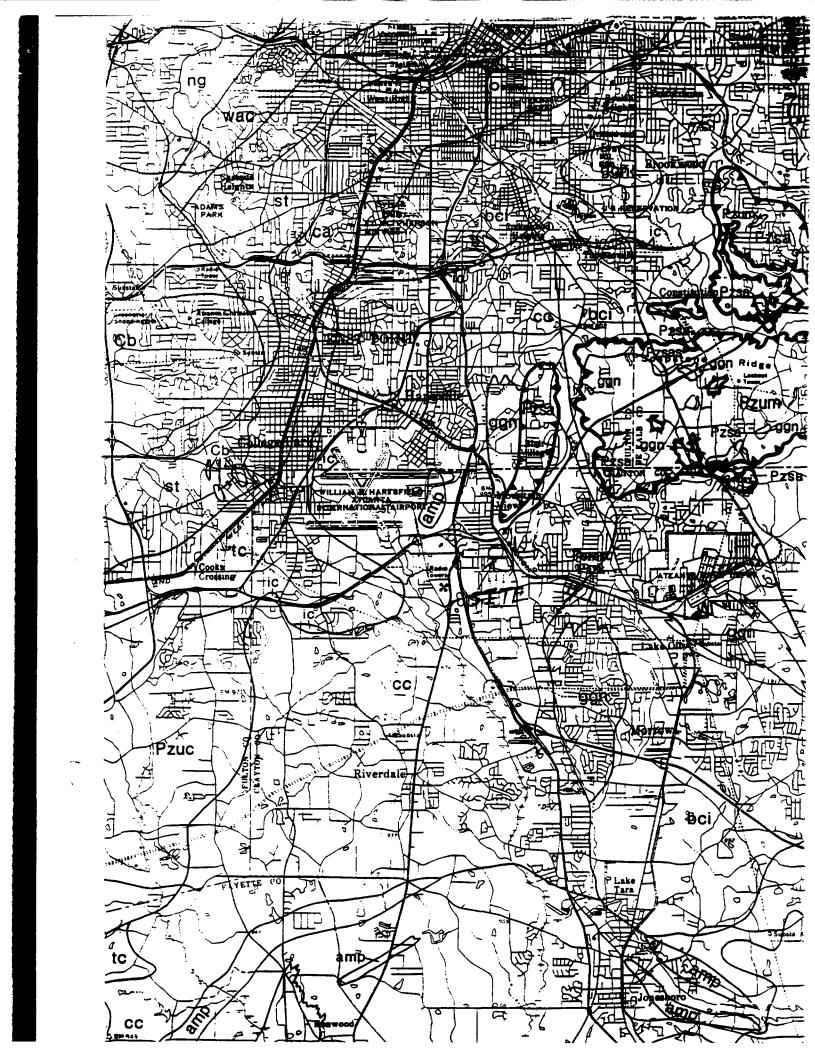


Plate I East, Bulletin 96



CONTENTS

Chemical quality of the water Contamination of ground water	Conert determine short ground water in the region Sucres of information
Page Bedienting attent Vield	Copth of wells Fractures in the routh

II.LUSTRATIONS

Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

TABLES

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GEOLOGICAL SURVEY CIRCULAR 538

By H. E. LeGrand

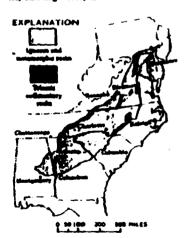
Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

By H. E. LeGrand

BITHODUCTION

This circular summerises the underground water conditions in the Piedmont and Blue Ridge provinces of the Southeastern Statesthe region shown on the geologic map (fig. 1).

There are several ways of developing water from the ground in this region, in earlier days springs were used because they are common to covee or an fowland slapes. Almost all eprings in the region yield between \$ to 3 gallane per misute and rarely show a significant decine to yield during dry weather. Dag wells were common in the past, but they are being remlaced by bored and drilled wells. Bored wells, like dug wells, are as much as 2 feet in



diameter and are commanly lined with concrote or torre asta pine; these wells do not extend tota bard rack and go dry if the water table falls below the bettern of the well. Drilled wells, which are now the most someon source of ground-water supply and which are the chief concern of this report, are cased to the hard rock and extend so spon holog into the rock.
Although some drilled wells are as small as I inches in dismeter and others are as large se 10 inches, the most common size to shoul 5 or 6 inches. Almost every well in recent years has been properly constructed to prevent water on the ground from running down the outside of the casing into the well.

EVALUATING SITES

A special attempt to made to help these who are interested in the yields of walls. Because yields of individual sells in the region vary greatly within distances as short as 100 feet, estimates of potential yields of procesutive wells are difficult to make. This fact has led frequently to water charleges, excessive costs, inconveniences, or under sexisty in many cases. As the yield of a well to unpredictable, the next best approach is to attempt to show, on a percentage basis, the chance for a certain yield from a well for different conditions.

Although many factors determine the yield of a well, two ground conditions, when used togother, serve as a good index for reting a well site. These conditions are topography and sell thickness. The ratings are based on the fallowing statement: High-yielding wells are common where thick residual salis and relatively low topographic areas are combined. and low-yielding wells are common where this polls and hilliops are combined. By comparing conditions of a site secording to the topographic and soil conditions one gets a relative

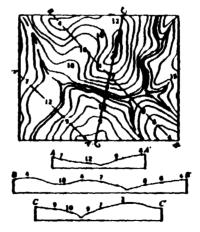
CHARRO WATER OF THE PROMONT AND BUE REDGE PROVINCES IN SCUTTERASTERN STATES

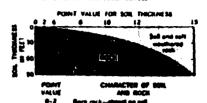
rating value. For example, the following topographic conditions are assigned point values:

Perete	Topography
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9	Goods uplant days
····	Design of the second
#	Lower gast of appeal days Valley beaute or Good place
	from its agreem calcingant area
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Figure 2 shows values for certain topogreekic conditions. Figure 3 shows rating values for seil thickness. The soil some to this report includes the normal soils and siss the relatively soft or weathered rock. The topographic conditions and sail conditions are separately raise, and the points for each are added to get the total points which may be used in table I to rate a site.

Using two well sites, A and S, so examples, we can evaluate each as to the potential yield of a well. Site 4, a pronounced rounded unland (4-point rating for topography in fig. 3) having a relatively thin soil (8-point rating for soil characteristic in fig 3), has a total of 18 points. In table I the average yield for aits A to 6 gpm (gallons per minute). This site has a 85-percent chance of yielding 3 gam and a 40percent chance of yielding 10 men. Site B, a



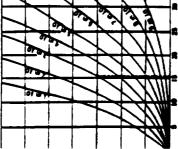


Marry data and comme and make

Toble L-Use of numerical rating of well site to estimate the percent chance of success of a well

[Data are based on maximum depth of 300 feet or maximum drawdown of water level of about 200 feet. No interference from mumo. ing is secured. Numerical rating is obtained by adding rating in points for topography and soul thickness!

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14	13	88	23	30	14	
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draw or slight ang in topography (10-point rising) having a macherally librit and (13-point rising), has a lead of 30 points, an average yield of 30 gpm, and a 73-porceal chance of yielding 23 gpm. Referring to figure 4, we see that the 10-point site has been than 1 chance in 10 of yielding 00 gpm whereas its 30-point site has been than 1 drawing the has been than 1 drawing the 30-point site has beinger than an even chance of yielding 00 gpm.

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More difficulty is likely to occur in rating character of sell and rock then to rating



CROBED WATER OF THE PERMANE AND BLUE ADOL PROVINCES IN BUILDSAFERM STATES



impography. Everyme should be able to de-irration by observation if the sell is this lies than Y sell and reit points as shown in figure 9 and if the sell to fairly thick (more than 10 sell and reit points), but the intermedial reliegs are difficult to make. If the asserva-is unsure of the sell and reit relieg shows the French (this sell) whice he may choose a 10-point value for the sell with santrace that he formed, in and considered a true reit in grown, in and considered a true reit in the report became it permitte in the soil sant, quarts vota in many cases is considered to be a silguily favorable indication of a good wall

to be proctee. One person may rate a particular other et 15 points, whereas another person may rate it at ity points; such a small difference in rating could not be unichedled. At most everyone's rating will be within 6 points of an everage rating for a also. The meanical rating system is not intended

YEL

lambed yield or withdrawed of under to make the form of the following th reported especify of a well to present water, generally during a chart pumping test. The maler for the corners The term "yield" to not definite but to the

the greater percentage of directed before the second before the service of the second before the second sec greeter percentage of yield to reached before

a well—appecially in the Blue Ridge and Pred-ment province. Yields for various levels the water in the pumped well are rearly known. The yields in this report are consid-ered to be standard for wells about 300 feet deep which are pumped about 13 hours sach day and in which dreadown of the meter level is about 300 feet. It is admined that there is no inferference by pumping from other sells, which would increase drawd, with. There is no simple definition of the yield of

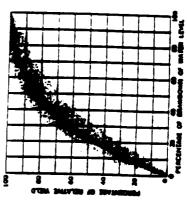


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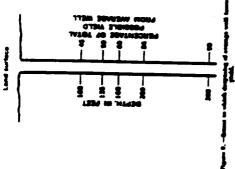
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DEPTH OF NELLS

der desp abmid a well be drilled? This offen is not easy to manuer for an indirect well. It mand places fractures in the rect annuler and force with depth and despited may not be economical. Pigers 9 no the percentage of said yield for certain the is an average well.

To following table above the percentage of to that reach their manifests yields at cer-i depths below which drilling to useless. As



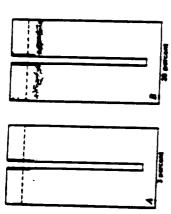


most of its interconnecting fractures occur in a same no desper than 100 feet below the lead burface, it may be wise to drift no desper than 150 feet if the yield in very pour, or no desper than 300 feet in absent all cases.

PRACTURES OF THE ROCK

Figure 10 Minutents at address fraction of the color of t enty as a storage reserved has which water decima. The yould of this well does not he crosse with incressed decisions. Well C pan-strates only due fraction, a large due near the

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to minute autility foca, the soil is similar to use it is de since and and foca autority to considerable mater for a six of a de since.

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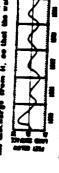
Here—a large one below a depth of 200 feet. top of the fresh rock. The sell is similar to

WATER TABLE

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WATER TABL

Tobbs ? -Concentrations of chemical consistents and their characteristic effects on water use in the region

[Concentration in parts per million except so indicated. Occurrence, where metal, is given in perembests after concentrations

Conditions	Concentration	Characteristic offects on upler up.
Suice (SiO ₂)	Baroly less than 15 or more than 45, commonly 20 to 35.	Portee hard seals to pipes and bollers but not normally a series areham
Iron (Fe)	Consecuty tees than 8.3 in sectors with pil took from water with pil took from water with pil took from \$0.5 assessments.	in the region. More than 0.3 ppm stains launity, alonalia, and flatures reddish brown.
Calcium (Ca) and magnesdum (Mg)	a fairly comman from prob- lom. Maroly loss than 3 or more than 60 (commanty 3 to 36 to water beneath light-	Cours most of the hardness and scale- forming proportion of under, (hes hardness haden.)
Bicarbonate (HCO3)	colored sells and 18 to 50 in water beneath dark-colored sells. Rarely less than 15 or more than 150, commonly 20 to	Concentrations is region are and gon-
Sulfate (SO ₄)	9	Concontrations in region are not gon- erally high enough to cause trouble. Eastly had enough to cause trouble. Eastly had be used being more than
Nitrate (PO)	Rarely more than I. commenty 0.0 to 0.0. Rarely more than 20. com.	<u>ŭ</u> }
Dissolved solids	Total of all mineral motter rectly escode \$10, commonly 10 to 130.	controlling greater than 45 pen may to her made to bother. Water conditioning more than 1.00 pen of discontrol solids to esculation for most purposes.
	Early less than 16 or more than 150 (commandy 16 to 80 to voter beament light- othered soil and 40 to 200 fa water beament dark- colored soils).	Littler will form, three maje before latter will form, three water forms said in water before the majer before the form the said in the form the said in the form the
14	Rarely less than pH of 3.5 or more than 7.5 (commonly 8.5 to 6.6 in suder beneath High colored sells and 6.5 to 7.5 in sells beneath dark-colored sells.	Value less than 3.5 indices actifity, and correctiveness of union gan- erally increases with decreasing pill.

GROUND WATTH UP THE PREMICHE AND BLUE ANDCE PROVENCES BY NOTHEASTERN STATES

at the end of the year is at about the name level as at the beginning of the year. Wells stilled tube recit may, when pumped at full expected, yield slightly lines defined the dried part of the year when the water table to too. Yet there appears to be me originate to pay the greent belief that the water table has been declining during recent years.

CHEMICAL QUALITY OF THE BATER

in comparison with ground unter in midaly actitized regions of the world, the water in the Flohman and Blue Ridge provinces remin among the best in Chemical quality. (See table 2.) Most of the under is less in total describe solide and is generally soil, but come is unequivalently hard.

from in water is the most common com-pision. As little as 0.4 spon fearts per millions will came a red date on plausing fitteres. Amed 5 of every 10 wells yield water with less than 0.3 spon of tree. About 6 cits will yield water with past encough from 6 came a light date, and chand 1 of 10 wells yield wat-ter that has considerable tree. Some tree problems result when from 10 wells yields wa-tering and chand 1 of 10 wells yields wa-rechs, and elbed when from 10 described from rechs, and elbed when from 10 described from rechs, and elbed when from 10 described from my 2 becom from state by correction. It is no perfort the described from the recht or from the perfort. Moder or from the recht or from the perform before mainded for its removed as explayed. Mode of the water to estimate the resultant to mean any type of the transmission of the mean or a well to drilled to determine it to determine the excessary. It is and penaltic to determine the meaning of water the mean

CONTABBATION OF GROUND BATER

of weight likel are little spected with about an equal sensible of expits femins and other waste then, it is proper to give serious attaction to be proceeded by the property of combination of an individual voice confidently of combination to greater the proceeded of the confidently from applied on the in-to according from a proper to greater the in-to according from a proper to the in-to according to according to the in-to according to according to the in-to according to according to a series of the in-to its proper and from confidently the metrical according to according to a series of the in-to its proper and from confidently the metrical according to according to the in-to-its in-to-its according to according to a series and its file are abount than where it is thick. Care In view of the meny hundreds of thousands

land surface can seep eacily take the well also important has caste. Not only to the well also important has so to the weats eithe. In most case; the chances of contaminated water from a water side soop to predict, but a few general abstraction can be made. For example, at a state side (1) a deep water table is sofer than a shallow water table, (3) thick soil to sofer than a shallow water table, (3) thick soil to sofer than a shallow water table, (3) thick soil to sofer than a shallow water table, (3) assign soil with some clay may be better than a class many on better than a class sandy soil are a sidely clay soil, and (4) a singe of bette the land surface and the water table neary from a well is better than and formard it. should be taken to see that no water from the

The soil and weathered rock are generally effective to preventing useds materials from peasing through the materials rock but the combination of (1) certain types of useds. (2) excessive quantities of disposed useds. (3) excessive quantities of disposed useds. (4) excessive quantities of disposed useds. And (3) this soils may remail in continuation to be bedreth factories force in the bedreth factories the containing bedreth the containing bedreth the containing bedreth the containing bedreth the containing bedreth the containing blies. Only a small percentage of uside have been containing uside and useds of the factories much to taken to materials the risk of containing to the taken to materials the risk of containing the class much of the containing the odd. distance between a well and a used of the rader table, much to be followed.

GENERAL STATEMENTS ABOUT GROUND WATER DITTEMENT OF THE RECODE

curring in an under ground resorveir, the se-ter being held in the span spaces of the reck maintain. The under table, representing the top of the reserveir, generally the table can, or desirangement reck materials. In the least part of the reserveir, under serves to main-cannelling fracture in bestrack; the furthers desirang fracture to bestrack; the furthers desirang fracture to bestrack; the furthers desirang the severity day of the bestrack for any table severy the fractures by scaping for any table of furthers. The semi-draw under the precipitation is the general steep of this motor is precipitation in the general 1. Ground water may be considered as oc-

3. A layer of residual seel and mesibered rock lice on the fresh rock in most places; the talchares of the mell and weathered rock reach. from sets to elightly more than 136 ranges from sere to eligibily more than lest,

gen H. — By one (since every thing lighted up to down come before or orbital of attention to the . The square of cone (street than to be down and to the down to be down to the cone of the tenth of the street to the ...

3. The unier table has a bill and valley restand that approximately conforms with our-need topography, although the unier table is ensewhed flatter. One fig. 12. For example, creek or river is the nurface expression of he unier table in a valley, but bemeath a hill he under table may be 30 to 70 feet before the presed surface. Ground unier, like surface refer, has the teachmay to drain every from he hills to the valleys. This teachmay being in planning the teachmay to drain stop ground to the contract of union to the valleys.

A close notwork of excesses prevails, and in most pieces on on options area a personal stream is less than I mile error.

3. Toward the streams is a continuous flow of ground water, flows of the authoring ground water is most up by organism and by transportation of plants in the valley arrest, he remainder of the water discharges as small syrings and to bank and channel seepage into

The solutel acroment of ground rater to redstively shart and to Almost everywhere re-writted to the some underlying the green tope-graphic claps extending from a particular hard-market divide to the adjacent streams.

1. In Ideal cases the pumping of a well cases the weigrand-small, the percent of the case thing in the well; herever, the errich description of the case being in the well; herever, the errich description of rest fractures and the cases therefore and everying suits cases the description of the weigrand-like was the description of the second second part of the weigrand-like cases the description of the head of second part of the weigrand-like the description of the second there is a strong likelihood of second therefore of pumping level between two, that is made cases there is a strong political will the depressed part of the wear that resty extends he whended been apart. From a pumping will be depressed part of the wear that resty extends he made a personal at the expectation belong to a slope on the apart of the wear to be regional bevering of the wear laber to a regional bevering of the wear laber to an expectation of pumping.

8. The relation of the depth of a well to pick of the equifor is not simple, is spite of some helicit, water already availablets a well is carry lead by drilling desper; therefore, there is always a chance of getting a larger respit by increasing the depth of the well. Yet this chance becames powers as the well despense became the inter-camering freedress and the ability of the rection to since and transactive feet even engaliterally with depth. Here than 50 powers of all greated mater exercise to the first left hed below the water table. One-crity was also less took one and transactive water than one well ded feet deep.

In the relationship of topography to yield in emphasics. The great majority of cells are brissed on hills or massest uplend dependences of comments and become these incidences and them assessed of comments of comments and the preventage of low-yielding veils in much greater and the great quiest one was cloped than in believed or from a veiley to a condition of emphasisman and the comments of the proposition of the proposition, such as gallies and related or emphasisman and the committees of completion that the proposition is a related to the proposition of the first proposition.

10. In general, wells are more productive and tend to have a more stable per-runal yield where there is attach mands of soil that where here reak crups out. The presence of a soil cover and the shounce of reak enterup coil cover and the shounce of reak enterup.

CHORDE BY IN OF UR ABBROADE PER SECONDICES OF SOUTHWASTERN STATES

suggest that water moves decembed into the rect and is not readly shaded to any located to aspect which; in fact, the soil cover suggests that their examinating rect fractures are available to element water and to transmit it to wells. Where there is a general sail cover, the water table generally like in it; therefore, the starrage is the vicinity is much greater than where here rock is expected and where the asterope is in the rect fractures that might be quickly drained.

11. Simple clear-cut statements shoul the value rysisting properties of the various types of reche are not easy to make. There are many variation of species and mathematical freeze and reches are statement to the properties that properties they may be grouped as follower [1] Secureths massive ignorant rects, such as gradies, and (3) administrative rects, such as schiefts, gasteres, and slates, which as principle, and (3) administrative rects, such as schiefts, gasteres, and slates, which are shown as althousant of minerals or as althousant of slates, and slates, which are gradies and places a special state of the properties, but, if an, if is also likely to show the facilities, but, if an, if is also likely to show the facilities, but, if an, if is also likely to show the facilities, but, if and if is also likely to show the facilities, but, if and if is also likely to show the facilities, but, if and the water-basing potential of a will ask, whereas the ready to show the properties for any properties are to many sequences that the properties of a type of rect. But it is indicated the properties of a

12. Whenever water is pumped from a well the water level to knowed the area of the water level to know the well. The drawdown increases with an increase in the rate of pumping oldering that relation to me chapts. For drawdom, a well problem to me chapts. For drawdom of 10 feet will not decided the problem of by increasing the freedom to 100 feet, before, it will problem than 10 feet me to 100 feet.

13. Some wells that are pumped heavily lead to decime gradually in yield. This had may be done to the following circumstances. The circumstances of a pump are determined from a short basiler or pumping lead when the well is complicted. Such a short lead when the well is complicted. Such a short lead way set before the large lead when the basiler we will become the first water to children form overage to the creat market may pass before there there is not beauty passes.

is a stable adjustment between the angust of water that the fractures can feed too the well and the annuant of water available to drain through the serviying city indo the fractures beeding the well. Tablers to have baseledge of water-level fractuations as a result of pumping to the crosses of many well problems and of the erroseness canceleden that well suspites are not deposedable. If a well tends to have an assessible yield, it is probably everymaged. A reduction in the rais of pumping and emails a relief of the water level will result in a personally sets yield. Constant pumping of a moderate rais done and damage a well.

16. There is a tendency for rects underlying slight-colored soil to yield upder that in low is discoved unioned souther and is eat. On the other hand, rache underlying darker soils fearly red, brown, and yelland tead to yield under that is elightly hard, or hard, and that may cantain objectionable amounts of iron.

13. Many propie think that a shallow depth to the water table to an indication of a good yield of a potential well, but take to not a rais to follow. In fact, where the water table is only a few feet beneath the land surface on an upland area, the rack fractures may be an exercise that sweet may not be able to move deserved in the reck; it is held ever the ground surface and perhaps to sharing out to the land surface as a well empage aget on a steep slope.

16. There are many mislature actions about the weakfallity of ground water in the region. These suitable of ground water is the region. These suitable of breakfall through any the economics of suitable through the economic that a certain term is the region could see deplete the behavior of wells. The common orwance of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of suitable summer of summer o

CHOICE WATTE OF THE PURMONT AND ILUE AIDCE PROVINCES IN SOUTHEASTERN STATES

SQUACES OF BAFORMATION

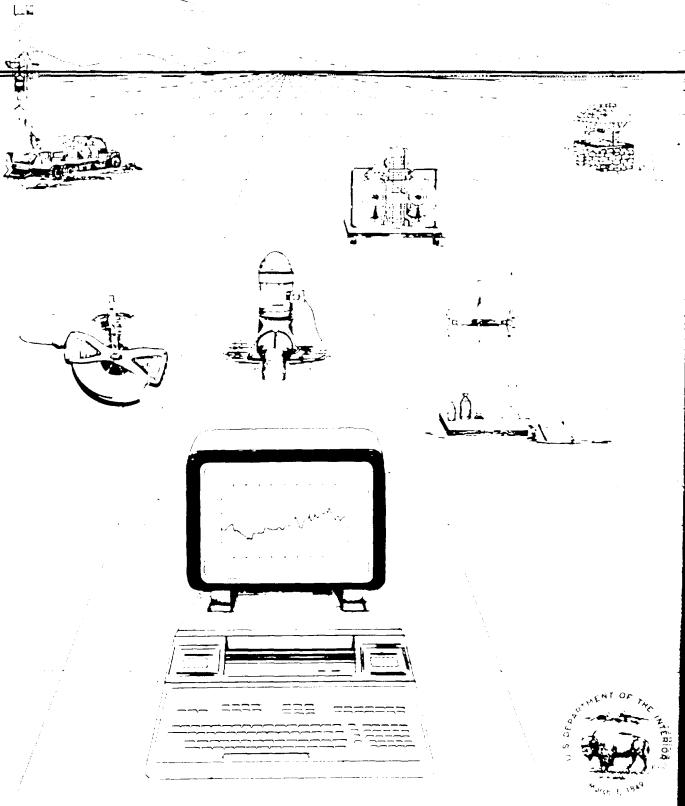
There are many sources of information out ground-under conditions in specific ris of the region. At least one agency is child the comparated financially with the c. State has comparated financially with the c. Goological Survey, and these agencies

have contributed in some way to the results of this report. Purther information shoul reports published or werk in progress may be obtain-ed from the statists effices of the Goological Survey in each State or From the respective State compersing agencies.

GROUND-WATER DATA FOR GEORGIA,

REFERENCE 13

1987



U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 88-323

GROUND-WATER DATA FOR GEORGIA, 1987

By C.N. Joiner, M.S. Reynolds, W.L. Stayton, and F.G. Boucher

U.S. GEOLOGICAL SURVEY

Open-File Report 88-323

Prepared in cooperation with the

GEORGIA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION GEORGIA GEOLOGIC SURVEY



Doraville, Georgia

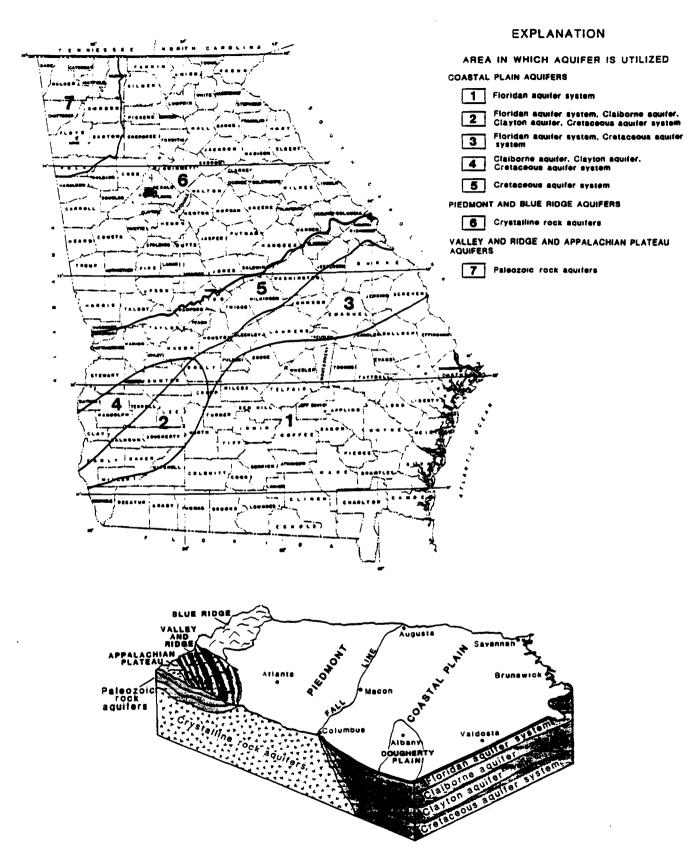


Figure 1.1-1.—Areas of utilization of major aquifers and block diagram showing major aquifers and physiographic provinces of Georgia.

2.2 Crystalline Rock Aquifers

Although individual crystalline rock aquifers are not laterally extensive; collectively they yielded an estimated 91 Mgal/d in 1985 (Turlington and others, 1987), primarily for rural supply. Ground-water storage occurs in unconsolidated material overlying the crystalline rock and in joints, fractures, and other types of secondary openings within the rock (Cressler and others, 1983).

Ground-water levels in the crystalline rock aquifers are affected mainly by precipitation and evapotranspiration. Rainfall in the area is heavy in winter and midsummer and relatively light in spring and fall. The driest season of the year is fall. Ground-water levels rise rapidly with the onset of late winter rains and reduced evapotranspiration, and generally reach their highest levels for the year in March or April. Increases in evapotranspiration and decreases in rainfall during the spring and early summer cause ground-water levels to decline. Heavy rainfall in midsummer results in small rises in ground-water levels, but a lack of recharge in the fall causes water levels to decline to the annual lows, which generally occur in October or November.

During 1987, the mean water levels at wells 10DD02 in Fulton County, 11FF04 in DeKalb County, and 19HH12 in Madison County were from 0.2 to 1.3 ft higher in 1987 than in 1986. By the end of March, water levels in the wells had recovered 1.5 to 4.8 ft from the record lows measured during the 1986 drought. However, a new record low was measured at well 10DD02 in early December. The decline was in response to local pumping at the end of 1987, and water levels were from about the same to 1.6 ft lower than at the end of 1986.

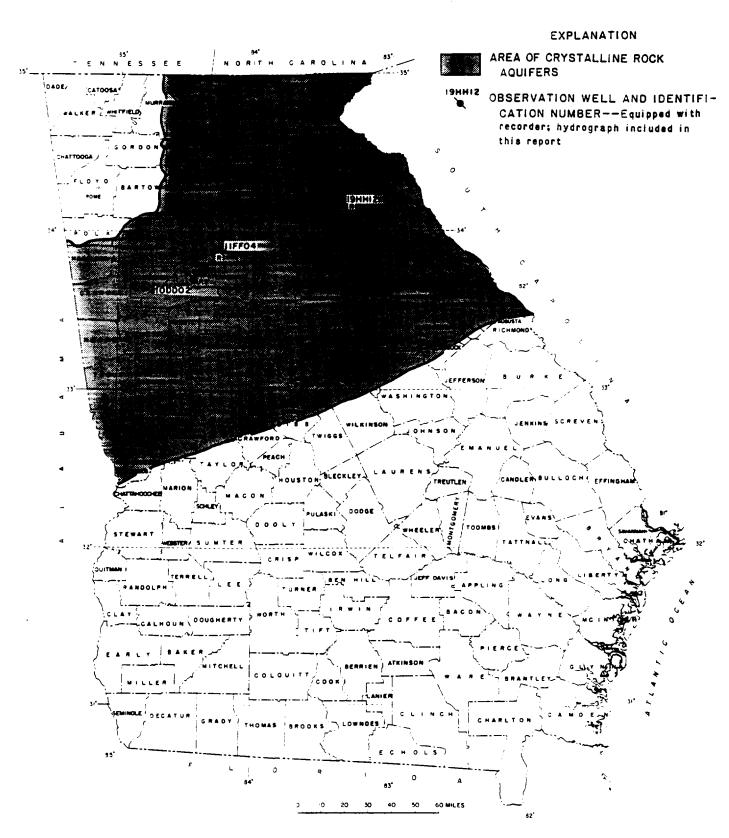
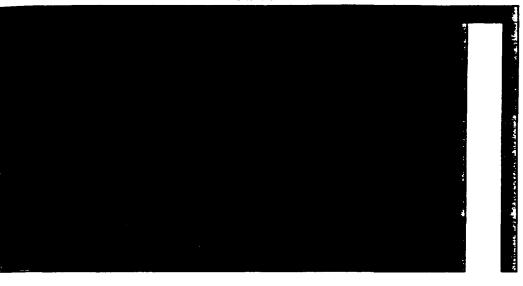


Figure 2.2-1.—Location of observation wells in the crystalline rock aquifers.



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GROUNDWATER

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If a temperature gradient can cause fluid flow as well as heat flow in a porous medium, it should come as no surprise to find that a hydraulic gradient can cause heat flow as well as fluid flow. This mutual interdependency is a reflection of the well-known thermodynamic concept of *coupled flow*. If we set $dh/dl = i_1$ and $dT/dl = i_2$, we can write a pair of equations patterned after Eq. (2.22):

$$v_1 = -L_{11}i_1 - L_{12}i_2 (2.23)$$

$$v_2 = -L_{21}i_1 - L_{22}i_2 \tag{2.24}$$

where v_1 is the specific discharge of *fluid* through the medium and v_2 is the specific discharge of *heat* through the medium. The L's are known as *phenomenological* coefficients. If $L_{12} = 0$ in Eq. (2.23), we are left with Darcy's law of groundwater flow and L_{11} is the hydraulic conductivity. If $L_{21} = 0$ in Eq. (2.24), we are left with Fourier's law of heat flow and L_{22} is the thermal conductivity.

It is possible to write a complete set of coupled equations. The set of equations would have the form of Eq. (2.23) but would involve all the gradients of Eq. (2.21) and perhaps others. The development of the theory of coupled flows in porous media was pioneered by Taylor and Cary (1964). Olsen (1969) has carried out significant experimental research. Bear (1972) provides a more detailed development of the concepts than can be attempted here. The thermodynamic description of the physics of porous media flow is conceptually powerful, but in practice there are very few data on the nature of the off-diagonal coefficients in the matrix of phenomenological coefficients L_{ij} . In this text we will assume that groundwater flow is fully described by Darcy's law [Eq. (2.3)]; that the hydraulic head [Eq. (2.18)], with its elevation and pressure components, is a suitable representation of the total head; and that the hydraulic conductivity is the only important phenomenological coefficient in Eq. (2.21).

2.3 Hydraulic Conductivity and Permeability

As Hubbert (1956) has pointed out, the constant of proportionality in Darcy's law, which has been christened the hydraulic conductivity, is a function not only of the porous medium but also of the fluid. Consider once again the experimental apparatus of Figure 2.1. If Δh and Δl are held constant for two runs using the same sand, but water is the fluid in the first run and molasses in the second, it would come as no surprise to find the specific discharge v much lower in the second run than in the first. In light of such an observation, it would be instructive to search for a parameter that can describe the conductive properties of a porous medium independently from the fluid flowing through it.

To this end experiments have been carried out with ideal porous media consisting of uniform glass beads of diameter d. When various fluids of density ρ and dynamic viscosity μ are run through the apparatus under a constant hydraulic

in a porous it can cause effection of $dl = i_1$ and 2):

(2.23)

(2.24)

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of equations of Eq. (2.21) s in porous carried out ed develop-description ractice there a matrix of iroundwater raulic head representa-y important

in Darcy's not only of experimental ing the same nd, it would execond run ive to search ous medium

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gradient dh/dl, the following proportionality relationships are observed:

$$v \propto d^2$$
 $v \propto \rho g$
 $v \propto \frac{1}{\mu}$

Together with Darcy's original observation that $v \propto -dh/dl$, these three relationships lead to a new version of Darcy's law:

$$v = -\frac{Cd^2\rho g}{\mu} \frac{dh}{dl} \tag{2.25}$$

The parameter C is yet another constant of proportionality. For real soils it must include the influence of other media properties that affect flow, apart from the mean grain diameter: for example, the distribution of grain sizes, the sphericity and roundness of the grains, and the nature of their packing.

Comparison of Eq. (2.25) with the original Darcy equation [Eq. (2.3)] shows that

$$K = \frac{Cd^2\rho g}{\mu} \tag{2.26}$$

In this equation, ρ and μ are functions of the fluid alone and Cd^2 is a function of the medium alone. If we define

$$k = Cd^2 (2.27)$$

then

27

$$K = \frac{k \rho g}{\mu} \tag{2.28}$$

The parameter k is known as the specific or intrinsic permeability. If K is always called hydraulic conductivity, it is safe to drop the adjectives and refer to k as simply the permeability. That is the convention that will be followed in this text, but it can lead to some confusion, especially when dealing with older texts and reports where the hydraulic conductivity K is sometimes called the coefficient of permeability.

Hubbert (1940) developed Eqs. (2.25) through (2.28) from fundamental principles by considering the relationships between driving and resisting forces on a microscopic scale during flow through porous media. The dimensional considerations inherent in his analysis provided us with the foresight to include the constant g in the proportionality relationship leading to Eq. (2.25). In this way C emerges as a dimensionless constant.

The permeability k is a function only of the medium and has dimensions $[L^2]$. The term is widely used in the petroleum industry, where the existence of gas,

oil, and water in multiphase flow systems makes the use of a fluid-free conductance parameter attractive. When measured in m^2 or cm^2 , k is very small, so petroleum engineers have defined the *darcy* as a unit of permeability. If Eq. (2.28) is substituted in Eq. (2.3), Darcy's law becomes

$$v = \frac{-k \rho g}{\mu} \frac{dh}{dl} \tag{2.29}$$

Referring to this equation, 1 darcy is defined as the permeability that will lead to a specific discharge of 1 cm/s for a fluid with a viscosity of 1 cp under a hydraulic gradient that makes the term $\rho g \, dh/dl$ equal to 1 atm/cm. One darcy is approximately equal to 10^{-8} cm².

In the water well industry, the unit gal/day/ft² is widely used for hydraulic conductivity. Its relevance is clearest when Darcy's law is couched in terms of Eq. (2.4):

$$Q = -K\frac{dh}{dl}A$$

The early definitions provided by the U.S. Geological Survey with regard to this unit differentiate between a laboratory coefficient and a field coefficient. However, a recent updating of these definitions (Lohman, 1972) has discarded this formal differentiation. It is sufficient to note that differences in the temperature of measurement between the field environment and the laboratory environment can influence hydraulic conductivity values through the viscosity term in Eq. (2.28). The effect is usually small, so correction factors are seldom introduced. It still makes good sense to report whether hydraulic conductivity measurements have been carried out in the laboratory or in the field, because the methods of measurement are very different and the interpretations placed on the values may be dependent on the type of measurement. However, this information is of practical rather than conceptual importance.

Table 2.2 indicates the range of values of hydraulic conductivity and permeability in five different systems of units for a wide range of geological materials. The table is based in part on the data summarized in Davis' (1969) review. The primary conclusion that can be drawn from the data is that hydraulic conductivity varies over a very wide range. There are very few physical parameters that take on values over 13 orders of magnitude. In practical terms, this property implies that an order-of-magnitude knowledge of hydraulic conductivity can be very useful. Conversely, the third decimal place in a reported conductivity value probably has little significance.

Table 2.3 provides a set of conversion factors for the various common units of k and K. As an example of its use, note that a k value in cm² can be converted to one in ft² by multiplying by 1.08×10^{-3} . For the reverse conversion from ft² to cm², multiply by 9.29×10^{2} .

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(2.29)

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Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

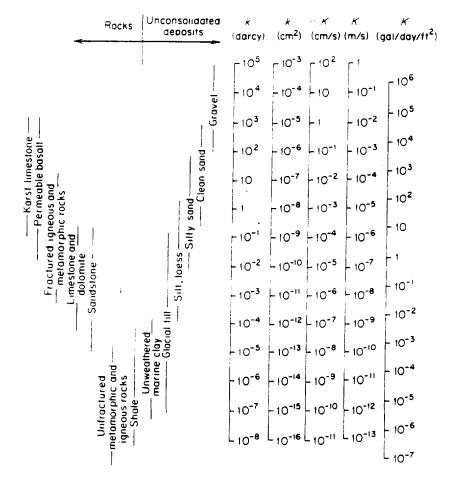


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

		Permeability, k*		Hy	draulic conducti	vity, <i>K</i>
	cm²	ft²	darcy	m/s	ft/s	U.S. gai/day/ft²
cm²	1	1.08 × 10-3	1.01 × 108	9.80×10^{2}	3.22×10^{3}	1.85 × 10°
ft?	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3,28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-2}	3.15×10^{4}	3.05×10^{-1}	1	6.46×10^{5}
U.S. gal/da	y:ft25.42 × 10 ⁻¹⁰	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-2}	1.55×10^{-6}	1

^{*}To obtain k in ft², multiply k in cm² by 1.08 \times 10⁻³.

GROUND WATER

IN THE GREATER ATLANTA REGION,

GEORGIA

Ву

C. W. Cressler, C. J. Thurmond, and W. G. Hester

Georgia Department of Natural Resources

Joe D. Tanner, Commissioner

Environmental Protection Division

J. Leonard Ledbetter, Director

Georgia Geologic Survey
William H. McLemore, State Geologist

Prepared in cooperation with the U.S. Geological Survey

Atlanta

1983

In table 7, which lists chemical analyses of well water, some wells retain numbers used in previous reports.

WATER-BEARING UNITS AND THEIR HYDROLOGIC PROPERTIES

The part of the GAR included in this study lies wholly within the Piedmont physiographic province (Clark and Zisa, 1976; Fenneman, 1938). The area is underlain by a complex of metamorphic and igneous rocks that have been divided by various workers into more than 50 named formations and unnamed mappable units. Individual rock units range in thickness from less than 10 ft to possibly more than 10,000 ft.

Regional stresses have warped the rocks into complex folds and refolded folds, and the sequence has been injected by igneous plutons and dikes and broken by faults. Erosion of these folded and faulted rocks produced the complex outcrop patterns that exist today. The large number of rock types in the area

and their varied outcrop patterns greatly complicate the occurrence and availability of ground water in the area. Nevertheless, many of the more than 50 named formations and unnamed mappable units in the GAR are made up of rocks that have similar physical properties and yield water of comparable quantity and chemical quality. Thus, for convenience, the rocks in the report area have been grouped into nine principal water-bearing units and assigned letter designations. The areal distribution of the waterbearing units and their lithologies are shown on plate i. Data on wells in the water-bearing units are summarized in tables 1-3.

OCCURRENCE AND AVAILABILITY OF GROUND WATER

Ground water in the GAR occupies joints, fractures, and other secondary openings in bedrock and pore spaces in the overlying mantle of residual material. Water recharges the underground

Table 1.-Summary of well date for the Greater Atlanta Region

			ield		PER	Canta	dapth	1	opegrapay	(percent o	d wile	in each	**************************************	
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A Amphibolica- gneiss- echist	385	20- 275	56	35- 2,175	294	0= 200	60	22	35	22	•	11	2	
S Granitic goeles	164	20- 348	72	40- 625	271	3- 266	54	33	45	2	. 14	6	o	a
C Schist	105	20- 150	47	67 - 700	195	14	53	19	19	27	20	li		0
O Biotite gneiss	70	20- 351	56	82- 710	270	7+ 140	56	20	27	16	6	11	0	0
E Mafic	32	20 - 471	79	67= 386	191	8 116	44	17	35	28	3	17	o	0
f Granite	43	20- 150	43	43 422	192	11- 187	57	30	30	15	15	10	0	a
G Cataclastic	33	20- 225	74	110- 800	323	8 207	84	•	75	15	•	2	0	0
H Quartsite	12	20 - 200	72	122- 500	297	30 65	58	45	,	27	18	0	a	0
J Carbonata	5	31-	76	24 0- 503	376	28- 314	138	٥	100	0	0	o	٥	٥

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Table 3. - Summary of wall data for the south half of the Greater Atlanta Anglon

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7	J Carbonate	_	82	,	285	1	ä	1	C	9 01	0	0	0	0	О

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openings by seeping through this material or by flowing directly into openings in exposed rock. This recharge is from precipitation that falls in the area.

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Unweathered and unfractured bedrock in the report area has very low porosity and permeability. Thus, the quantity of water that a rock unit can store is determined by the capacity and distribution of joints, fractures, and other types of secondary openings. The quantity of stored water that can be withdrawn by wells depends largely on the extent to which the rock openings are interconnected.

The size, spacing, and interconnection of openings differ greatly from one type of rock to another and with depth below land surface. Open joints and fractures tend to become tighter and more widely spaced with increasing depth. Joints and other openings in soft rocks such as phyllite tend to be tight and poorly connected; wells in rocks of this character generally have small yields. On the other hand, openings in more brittle rocks such as quartizite and graywacke tend to be larger and are better connected; wells in these rocks normally supply greater yields. Other rocks, including amphibolite, schist, and gneiss, are variable in the size and connection of secondary openings and generally yield small to moderate quantities of water to wells. Carbonate rocks, which include marble, can contain much larger and more extensively interconnected fracture systems. Openings in carbonate rocks commonly are enlarged by solution, and are capable of transmitting large quantities of water.

Effects of Drainage Style

The GAR is divided nearly in half by the Chattahoochee River, which follows a comparatively straight southwesterly course for nearly 110 miles across the area (fig. 1). Streams in the north half of the area, including the Chattahoochee River and its tributaries, mainly have rectangular and trellis drainage styles. In contrast, streams in the south half of the area, beginning at about the south edge of the Chattahoochee River basin, have a dendritic drainage style (Staheli, 1976).

Streams having rectangular drainage style flow in strongly angular courses that follow the rectangular pattern of the joints that break up the rocks. Areas having trellis drainage style are characterized by strongly folded and dipping rocks; the larger streams follow the outcrops of less resistant rocks and tributaries enter at right angles across the dip of the strata (Lobeck, 1939, p. 175). All of the streams in the north half of the area show the influence of geologic control, their drainage styles reflecting the varied outcrop pattern, the different lithologies present, and the geologic structure.

In the south half of the area, the dendritic drainage style is indicative of streams that developed independently of the underlying geology (Laforge and others, 1925; Staheli, 1976). According to Staheli (1976, p. 451), dendritic drainage, in which streams run in all directions like the branches of a tree, propably was established on some preexisting surface and later superimposed on the underlying crystalline rocks. Such streams are said to be superimposed when they acquire a course on nearly flat-lying material that covered the rocks beneath. Streams flowing on the veneer of material that covers the bedrock are superimposed above the concealed rocks. When rejuvenated by uplift, they become incised and develop courses without.regard to the structure or lithology of the underlying rocks. Eventually, the cover material may be entirely removed and then only the physiographic pattern of the streams will suggest their having been let down from a superimposed position (Lobeck, 1939, p. 173).

According to Staheli (1976, p. 451), to explain the different drainage styles in regions underlain by similar rocks and

gneisses. Dark-gray to black flinty crush rock occurs in association with sore mafic rocks, such as diabase.

The sheared country rock generally shows little or no replacement mineralization. Shearing of biotite-rich gneisses commonly results in a rock having a schistose texture containing a large proportion of platy minerals (muscovite or biotite). Sheared amphibolites retain the same mineralogy but indergo abrupt textural changes that produce the previously mentioned diamond-shaped fragments. Schist that has been sheared may weather into small disk-shaped pieces and is referred to as button schist."

HIGH-YIELDING WELLS

In this report, the term "high-yielding wells" refers to ones that supply a minimum of 20 gal/min, except in the belt extending from College Park through Atlants, where the minimum yield is 50 gal/min. The maximum yields of the wells range from 35 to 470 gal/min, the wide range in yields resulting from differences in rock type, geologic structure, and topographic settings. The distribution of high-yielding wells in the report area is shown on plate 1.

Data on more than 1,500 high-yielding wells in the GAR were obtained from files of the U.S. Geological Survey, local drilling contractors, and ground-water hydrologists, and from previous publications. The location of each high-yielding well used in this report was confirmed by field checking and plotted on copographic maps for determination of latitude, longitude, and topographic setting. Construction and yield data were confirmed, where possible, by interviews with well owners. About 400 reportedly high-yielding wells were excluded from use in this report because the wells could not be located within the alloted time or significant questions remained about the accuracy of yield or construction data.

SELECTING SITES FOR HIGH-YIELDING WELLS

Selecting sites for high-yielding wells requires a knowledge of the character of the underlying bedrock, the structural and stratigraphic features present. and the relation of these features to the topography and drainage. This knowledge generally is obtained by a foot traverse of the area, during which structural and stratigraphic features such as fault zones, contact zones, zones of fracture concentration, the dip and strike of foliation and layering, the strike and plunge of fold axes; and other clues to localized increases in bedrock permeability are plotted on a topographic map. Locating observed features on a topographic map is a good way to understand their relation to the topography and drainage.

The appropriate method(s) to use for selecting high-yielding well sites depends on (1) the quantity of water needed, (2) the topography and the drainage style of the area, (3) the rock type, (4) the types and character of structural and stratigraphic features present in the rock, and (5) imposed constraints, such as being limited to a small area or to specific pieces of property, or the requirement that the sites be near pipelines or other facilities. Site selection methods that can be applied to most combinations of geology, topography, and drainage are presented below.

The reader also should understand that the successful siting of high-yielding wells in the GAR is not particularly good. Drilling of multiple wells to obtain required yields is common. Also, it should be recognized that some sites, for practical purposes, are virtually "barren" of ground water.

Topography and Soil Thickness

Because the yields of individual wells in the GAR vary greatly within short distances, estimating the potential yield of prospective sites can be very difficult. Most methods for selecting well sites require a knowledge of geology and structure, which restricts their use primarily to hydrologists. A method was developed by LeGrand (1967) that utilizes only topography and soil thickness, and is suitable for use by nonhydrologists. The method provides a means for estimating, on a percentage basis, the chances of obtaining certain yields from prospective well sites in a variety of settings.

The LeGrand Method

"Although many factors determine the yield of a well, two ground conditions when used together serve as a good index for rating a well site. These conditions are topography and soil thickness. ratings are based on the following statement: High-yielding wells are common where thick residual soils and relatively low topographic areas are combined, and low-yielding wells are common where thin soils and hilltops are combined. By comparing conditions of a site according to the topographic and soil conditions one gets a relative rating value. For example, the following topographic conditions are assigned point values:

Points	Topography
0	Steep ridge top
2	Upland steep slope
4	Pronounced rounded upland
5	Midpoint ridge slope
7	Gentle upland slope
8	Broad flat upland
9	Lower part of upland slope
12	Valley bottom or flood plain
15	Draw in narrow catchment area
18	Draw in large catchment area

"Figure 21 shows values for certain topographic conditions. Figure 22 shows rating values for soil thickness. The soil zone in this report includes the normal soils and also the relatively soft or weathered rock. The topographic and soil conditions are separately rated, and the points for each are added to get the total points which may be used in table 5 to rate a site.

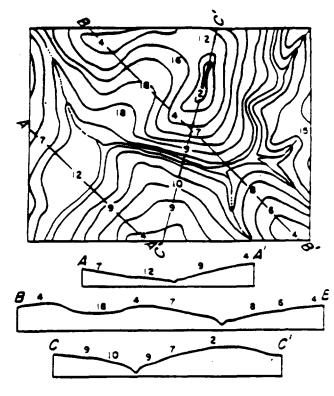


Figure 21. Topographic map and profile of ground surface showing rating in points for variou topographic positions.

(LeGrand, 1967).

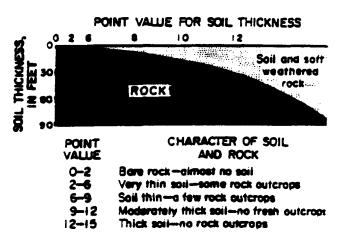


Figure 22. Rating in points for variou conditions of soil thicknes (LaGrand, 1967).

Table 5.—Use of numerical rating of well site to estimate the percent chance of success of a well (LeGrand, 1967)

[Data are based on maximum depth of 300 feet or maximum drawdown of water level of about 200 feet. No interference is assumed. Numberical rating is obtained by adding rating in points for topography and soil thickness; gpm, gallons per minute.]

Total points of a	Average yield (gpm)	Chance of success, in percent, for a well to yield at least—							
site	(Sher)	3 gpm	10 gpm	25 gpm	50 gpm	75 gpm			
5 6 7 8 9 10 11 12 13 14	2 3 3 4 5 6 7 9 11 12	48 50 55 55 60 65 70 73 77 80 83	18 20 25 30 35 40 43 46 50 52	6 7 8 11 12 15 19 22 26 30	2 3 3 4 5 7 10 12 14				
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	16 17 20 23 26 28 31 34 37 39 41 43 45 46 50	85 86 87 88 89 90 91 92 93 93 94 95 95	57 60 63 66 70 72 74 76 78 80 81 82 83 84	36 40 45 50 52 54 56 58 60 62 64 66 68 71 73 75	18 20 24 25 27 30 35 38 40 43 46 48 50 53 56 60	12 15 18 20 22 24 26 29 32 36 40 42 44 47 50			

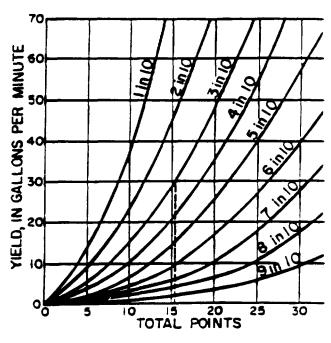
"Using two wells sites, A and B as examples, we can evaluate each as to the potential yield of a well. Site A, a pronounced rounded upland (4-point rating for topography in fig. 21) having a relatively thin soil (6-point rating for soil characteristics in fig. 22), has a total of 10 points. In table 5 the average yield for site A is 6 gal/min. This site has a 65-percent chance of yielding 3 gal/min and a 40-percent chance of yielding 10 gal/min. Site B, a draw or slight sag in topography (18-point rating) having a moderately thick soil (12-point rating), has a total of 30 points, an average yield of 50 gal/min, and a 73percent chance of yielding 25 gal/min. Referring to figure 23, we see that the 10-point site has less than I chance in 10 of yielding 40 gal/min, whereas the 30-point site has better than an even chance of yielding 40 gal/min.

"Some topographic conditions of the region and a few topographic ratings are shown in figure 24. Wells located on concave slopes are commonly more productive than wells on convex slopes or straight slopes. Broad but slightly concave slopes near saddles in gently rolling upland areas are especially good sites for potentially high-yielding wells. On the other hand, steep V-shaped valleys of the gully type may not be especially good sites, and they should be avoided if surface drainage near the well is so poor that contamination is possible.

"More difficulty is likely to occur in rating character of soil and rock than in rating topography. Everyone should be able to determine by observation if the soil is thin and if the soil is fairly thick (more than 10 soil and rock points), but the intermediate ratings are difficult to make. If the observer is unsure of the soil and rock rating above the 6-point (thin-soil) value, he may choose a 10-point value for the site with assurance that he is fairly correct. White quartz or flint is not considered a true rock in this report, because it persists in the soil zone; a quartz vein, in many cases, is considered to be a slightly favorable indication of a good well site.

"The numerical rating system is to intended to be precise. One person to rate a particular site at 15 point whereas another person may rate it at points; such a small difference in ratio would not be misleading. Almost ever one's rating will be within 5 points an average rating for a site."

Limitations.—LeGrand's method is esp cially well suited to the north half the report area, where the topography a geology are closely related and the top graphic setting and soil thickness a indicative of bedrock permeability. can be applied there in every type topographic setting, from the smalle draws and drainages to the larger stre valleys. The use of LeGrand's meth should bring about a substantial increa in the percentage of high-yielding well



EXAMPLE: A site with 16 points has 3 chances in 10 of yielding at least 30 gallons per minute and 6 chances in 10 of yielding 10 gallons per minute.

Figure 23. Probability of getting certain yield from a well at different sites having various total-point ratings.
(LeGrand, 1967).



From LeGrand, 1967

Figure 24. Countryside showing approximate ratings for topography. Numbers refer to figure 22.

In the south half of the area, the method probably will be most reliable in the uppermost headwaters areas of streams and along draws and drainages that flow down ridge slopes. In these areas, high-yielding wells commonly result when a dry hole on a hilltop or ridge crest is abandoned in favor of a site in the nearest draw or saddle, or downslope midway between the hilltop and the draw. The larger superimposed streams and drainages are not necessarily located over zones of bedrock weakness and, therefore, the method may not be applicable in those areas.

Contact Zones Between Rock Units of Contrasting Character

Potentially permeable contact zones between rock units of contrasting character occur in the GAR wherever Units B, D, and F are in contact with Units A, C, and E and in some areas with Unit G. Some contact zones between Unit C and Units E, H, and G also may be permeable. Most contacts between these units are shown on

REFERENCE 16

HALLIBURTON NUS ENVIRONMENTAL CORPO	TELECON NOTE	
CONTROL NO.	TIME: 1330	
DISTRIBUTION:		
BETWEEN: Gilbert Peeples	OF: Director, Clayton County Water Department	PHONE: (404) 474-7128
AND: Suzanne Quillian		
one on the Flint River supply 9,0 and one on Big Cotton Indian C The city of Atlanta supplies mos	om supplies 46,000 connections from four into 200,000 gailons per day. The other two into 200,000 gailons per day (both stoff the water for the study area. Its water is of Atlanta withdraws approximately 180,000 gailons per day (both stoff Atlanta withdraws approximately 180,000 gailons per day (both stoff Atlanta withdraws approximately 180,000 gailons per day (both stoff the water for the study area. Its water is soff Atlanta withdraws approximately 180,000 gailons per day (both stoff the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area. Its water is soft the water for the study area.	kes, one on Little Cotton Indian Creek th intakes are located in Henry County).

REFERENCE 17

DEFERENCE 17						
HALLIBURTON NUS ENVIRONMENTAL CORPORATION	TELECON NOTE					
CONTROL NO.	TIME: 1150					
DISTRIBUTION:		. 				
Bagcraft Corporation						
BETWEEN: Russell Morehead	OF: Clayton County Public Works Dept.	PHONE: (404) 473-3900				
AND: Suzanne Quillian						
DISCUSSION:		- 				
Mr. Morehead explained that storm dra the land to the nearest surface water both the Clayton County Dept. of Public With the storm drainage system does not worthe last several years, and flooding of the blocked or caved in. Mr. Morehead furt percolate into the ground because there and 285.	ody. However, studies are being condu forks and the city of Forest Park. The s rk as explained above. The storm drain he area occurs in times of heavy rains. I her explained that much of the runoff	ucted on the storm drains in the area tudies are being conducted because his have had backup problems during lit is suspected that the drains are from the industrial area would				

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

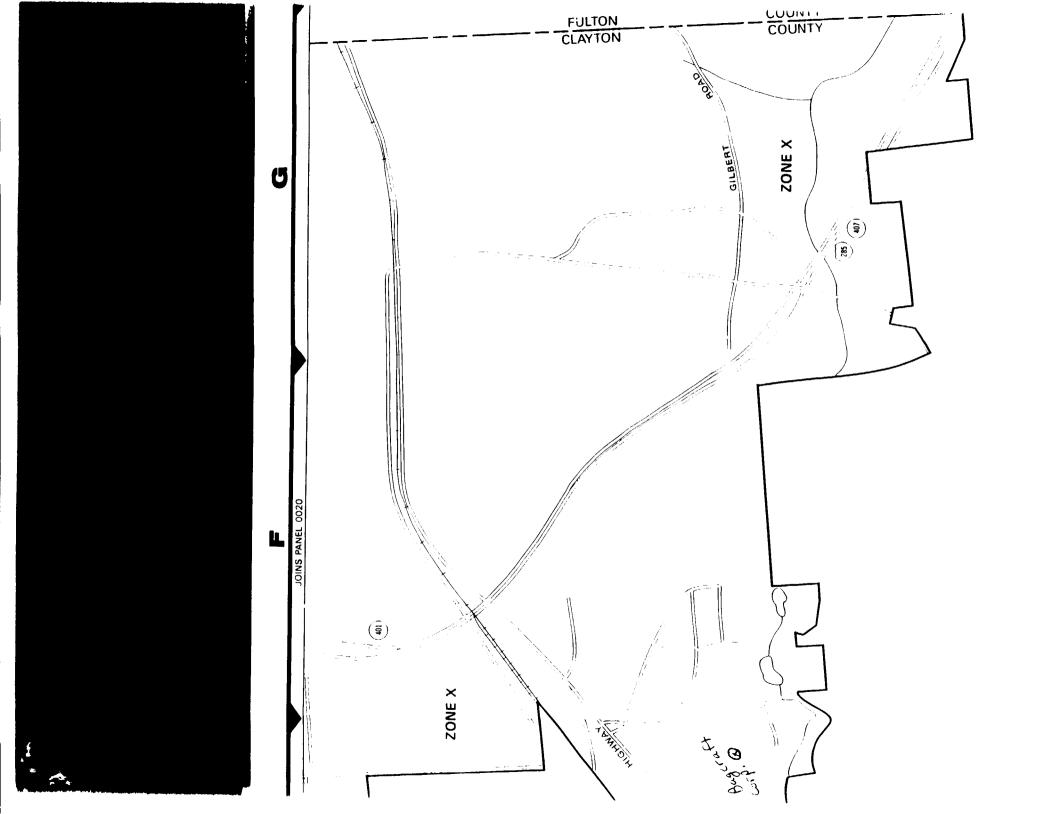
FLOOD INSURANCE RATE MAP

CLAYTON COUNTY, GEORGIA (UNINCORPORATED AREAS)

PANEL 60 OF 60

COMMUNITY—PANEL NUMBER: 130041 0060 C MAP REVISED: NOVEMBER 6, 1991

Federal Emergency Management Agency



REFERENCE 19

Bagcra LATITU	ift Corpo		ONGITUDE	84:23:21	1980	POPULATION	
км о.	00400	.400810	.810-1.60	1.60-3.20	3.20-4.80	? - 4 4.80-6.40	SECTOR TOTALS
S 1 S 2 S 3 S 4 S 5 S 6 S 7 S 8	0 0 0 0 0 0 0	0 672 0 0 0 273 0	258 2123 0 0 0 0 0 0 212	1215 2153 4147 4753 3822 413 0	7188 5758 3282 4021 1794 3625 578 1554	10387 585 1641 6045 7472 6510 3731 7601	19048 11291 9070 14819 13088 10821 4309 9367
RING TOTALS	0	945	2593	16503	27800	43972	91813
MENU:	Geodata Spappa	co continue Handling I	ata List p gangana			neses)	

or a command: HELP, HELP option, BACK, CLEAR, EXIT, TUTOR

GEMS> exit

Type YES to confirm the EXIT command; type NO to restart GEMS GEMS> yes \$ logout

HTW logged out at 16-APR-1993 15:46:40.98 Itemized resource charges, for this session, follow:

NODE: VAXTM1

ACCT: 9040 START TIME: 16-APR-1993 15:44:36.29 PROJ: GEMS0001 FINISH TIME: 16-APR-1993 15:46:40.98

USER: HTW BILLING PERIOD:930401 UIC: [000710,000012] WEEKDAY: FRIDAY BAUD: TERMINAL PORT: VTA2729

DESCRIPTION OF CHARG	GE	QUANTITY	EXPENDITURE
ALL CHARGE LEVELS			
300 baud	(Seconds)	125	0.0000
CPU TIME	(Seconds)	2	0.4656
TOTAL FOR THIS S	SESSION		9 0 4656

This total reflects the charges for this process only, subprocesses created during this session are accounted for separately

Enter selection:

REFERENCE 20

Codes for Wetlands and Heritage Database

I. Precision Codes

Code	Description	
SC .	Seconds Confirmed	Accuracy of locality is mappable within a three-second radius (roughly the area covered by the dot). The site has been visited and the element is known to occur precisely there
S	Seconds	Accuracy of locality is mappable within a three-second radius (roughly the area covered by the dot). The place as described in source(s) is precisely mappable, whether or not the element is known to occur precisely there.
И	Minute	Accurate within a one-minute radius (approximately 2km or 1.5 mi. from the centerpoint of the dot).
G	General	Quad or place name precision only (precision within about 8 km or 5 mi.).
U	Unmappable	Cannot be mapped due to incomplete or inaccurate information.

II. Global Element Ranking Codes

rediscovered.

GΧ

Code	Description
31	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to extinction.
G2	Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to extinction throughout its range.
G3	Either very rare and local throughout its range or found locally (even aboundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.
G4	Apparently secure globally, though it may be quite rare in parts of its range, expecially at the periphery.
G5	Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
GH	Of historical occurrence throughout its range, i.e., formerly part of the established biota, with the expectation that it may be rediscovered (e.g., Bachman's Warbler).
GÜ	Possibly in peril range-wide but status uncertain; need more information. NOTE: This rank should be used sparingly. Whenever possible, assign the most likely rank and add a question mark (e.g., G2?) to express uncertainty, or use a range (e.g., G2G3) to delineate the limits (range) of uncertainty.

Believed to be extinct throughout range (e.g., Passenger Pigeon) with virtually no likelihood that it will be

III. State Element Ranking Codes

Code Description

- Critically imperiled in state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to
- Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to extirpation from the state.
- Rare or uncommon in state (on the order of 21 to 100 occurrences).
- Apparently secure in state, with many occurrences.
- Demonstrably secure in state, and essentially ineradicable under present conditions.
- Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very greate intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and viceversa.
- Of historical occurrence in the state, perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an element would become SH without such a 20-year delay if the only known occurrences in a state were destroyed or if it had been extensively and unsuccessfully looked for. Upon verification of an extant occurrence, SH-ranked elements would typically receive an S1 rank. The SH rank should be reserved for elements for which some effort has been made to relocate occurrences, rather thatn simply ranking all elements not known from verified extant occurrences with this rank.

III. State Element Ranking Codes (cont.)

Code Description

SN

usually migratory typically Regularly occurring, and nonbreeding species for which no significant or effective habitat conservation measures can be taken in the state; this category includes migratory birds (concentration sites for migratory birds are grouped in the "other" category and ranked accordingly - bats, sea turtles, and cetaceans which do not in a given state but pass through twice a year or may remain in the winter (or, in a few cases, the summer); included also are certain lepidoptera which regularly migrate to a state where they reproduce, but then completely die out every year with no return migration. Species in this categorty are so widely and unreliably distributed during migration or in winter that no small set of sites could be set aside with the hope of significantly furthering globally-ranked species (such as the bald eagle. whooping crane or some seal species) regularly spend some portion of the year at definite localities (and therefore have a valid conservation need in the state) should NOT be ranked SN, but rahter S1, S2, etc. This rank is also not for "lost causes", which in someone's opinion be saved. The reasons for assigning the SN rank cannot may not be apparent from the fact pattern on the Element State Ranking Form, since there may be low numbers, Therefore, the reasons must be carefully set out in SREASONS under SRANK.

SR

Reported from the state, but without persuasive documentation whice would provide a basis for either accepting or rejecting (e.g., misidentified specimen) the report. Some of these are very recent discoveries for which the program hasn't yet received first-hand information; others are old, obscure reports that are hard to dismiss because the habitat is now destroyed.

SRF

Reported falsely (in error) from state but this error persisting in the literature.

SU

Possibly in peril in state but status uncertain; need more information. NOTE: This rank should be used sparingly. Whenever possible, assign the most likely rank and add a question mark (e.g., G2?) to express uncertainty, or use a range (e.g., G2G3) to delineate the limits (range) of uncertainty.

SX

Apparently extirpated from state.

Georgia Department of Natural Resources DISCLAIMER

Dear Database User:

· · · ·

Please keep in mind the limitations of our database. The sites in questic may contain rare species or important natural areas of which we are unaware.

The data collected by the Freshwater Wetlands and Heritage Inventory come from a variety of sources, including museum and herbarium records, literature and reports from individuals and organizations, as well as field surveys be our staff biologists. In most cases the information is not the result of a on-site survey by our staff. Many areas in Georgia have never been surveye thoroughly. Therefore, the Freshwater Wetlands and Heritage Inventory can only occasionally provide definitive information on the presence or absence or rare species on a given site.

Our files are updated constantly as new information is received. Thus information provided by our program represents the existing data in our file at the time of the request and should not be considered a final statement of the species under consideration.

Sincerely,

Freshwater Wetlands and Heritage Inventory

GEORGIA DEPARTMENT OF NATURAL RESOURCES Freshwater Wetlands & Heritage Inventory Database - July, 1990

For SOUTHWEST ATLANTA QUAD

Scientific Name;	Last		Global	State	County;
Common Name	Observed	Precision	Rank	Rank	Quad
AIMOPHILA AESTIVALIS	1903-05-10	м	G3	s3	GAFULT
BACHMAN'S SPARROW					SOUTHWEST ATLANTA

⁺ There were no listings for the other goads (Southeast Atlanta, Jones boro, and Riverdale).

REFERENCE 21

ENDANGERED AND THREATENED SPECIES

OF THE

SOUTHEASTERN UNITED STATES

(THE RED BOOK)

Prepared by:

U.S. Fish and Wildlife Service Southeast Region Atlanta, Georgia

January 1992

Availability Unlimited
For Sale by Superintendent of Documents
Post Office Box 371954
Pittsburgh, PA 1525O-7954

Stock Order Number: 924-OO3-OOOO-6

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

<u>Mammals</u>	General Distribution
Bat, gray (Myotis grisescens) - E Bat, Indiana (Myptis sodalis) - E Manatee, West Indian (Trichechus manatus) - E Panther, Florida (Felis concolor coryi) - E Whale, finback (Balaenoptera physalus) - E Whale, humpback (Megaptera novaeangliae) - E Whale, right (Eubalaena glacialis) - E Whale, sei (Balaenoptera borealis) - E Whale, sperm (Physeter catodon) - E	Northwest, West Extreme Northwest Coastal waters Entire State Coastal waters Coastal waters Coastal waters Coastal waters Coastal waters Coastal waters
Birds	
Eagle, bald (<u>Haliaeetus leucocephalus</u>) - E Falcon, American peregrine	Entire State
(<u>Falco peregrinus anatum</u>) - E Falcon, Arctic peregrine	North
(<u>Falco peregrinus tundrius</u>) - T	Coast, Northwest Coast
Plover, piping (<u>Charadrius melodus</u>) - T Stork, wood (<u>Mycteria americana</u>) - E	Southeastern swamps
Warbler, Bachman's (<u>Vermivora bachmanii</u>) - E Warbler, Kirtland's (<u>Dendroica kirtlandii</u>) - E Woodpecker, ivory-billed	Entire State Coast
(Campephilus principalis) - E	South, Southwest
Woodpecker, red-cockaded (<u>Picoides</u> [= <u>Dendrocopos</u>] <u>borealis</u>) - E	Entire State
Reptiles	
Alligator, American	Constal plain
(Alligator mississippiensis) - T(S/A)* Snake, eastern indigo	Coastal plain
(<u>Drymarchon corais couperi</u>) - T	Southeast

^{*}Alligators are biologically neither endangered nor threatened. For law enforcement purposes they are classified as "Threatened due to Similarity of Appearance." Alligator hunting is regulated in accordance with State law.

GEORGIA (cont'd)

General Distribution

Turtle, Kemp's (Atlantic) ridley (Lepidochelys kempii) - E
Turtle, green (Chelonia mydas) - T
Turtle, hawksbill (Eretmochelys imbricata) - E
Turtle, leatherback

Coastal waters
Coastal waters

Coastal waters

(<u>Dermochelys</u> <u>coriacea</u>) - E

Coastal waters

Turtle, loggerhead (<u>Caretta caretta</u>) - T

Coastal waters

Fishes

Darter, amber (<u>Percina antesella</u>) - E,CH

Darter, goldline (<u>Percina aurolineata</u> - T

Darter, snail (<u>Percina tanasi</u>) - T

Conasauga R., Murray County Upper Coosa River System

Logperch, Conasauga (<u>Percina jenkinsi</u>) - E,CH Shiner, blue (<u>Cyprinella caerulea</u>) - T S. Chickamauga Cr., Catoosa County Conasauga R., Murray County Conasauga and Coosawattee Rivers, Holly, Rock, Perry, and Turniptown Creeks

Sturgeon, shortnose (<u>Acipenser brevirostrum</u>) - E

Coastal rivers

<u>Plants</u>

Amphianthus pusillus (little amphianthus) - T

Baptisia arachnifera (hairy rattleweed) - E

Echinacea laevigata (smooth coneflower) - E Helonias bullata (Swamp pink) - T Isoetes melanospora (black-spored quillwort) - E Piedmont Region (17 Counties) Wayne, Brantley Counties Stephens County Union County

<u>Isoetes tegetiformans</u> (mat-forming quillwort) - E

Dekalb, Rockdale, Gwinnett Counties

<u>Isotria medeoloides</u> (small whorled pogonia) - E
<u>Lindera melissifolia</u> (pondberry) - E
<u>Marshallia mohrii</u> (Mohr's
Barbara's-buttons) - T
Oxypolis Canbyi (Canby's dropwort) - E

Columbia, Hancock, Greene, Putnam Counties

Rabun County Wheeler County

Floyd County Burke, Lee, Sumter Counties

State Lists 10/8/92

GEORGIA (cont'd)

<u>Ptilimnium nodosum</u> (harperella) - E <u>Rhus michauxii</u> (Michaux's sumac) - E

<u>Sagittaria</u> <u>secundifolia</u> (Kral's waterplantain) - T

Silena polypetala (fringed campion) - E

<u>Sarracenia oreophila</u> (green pitcher plant) - E Towns County <u>Scutellaria montana</u> (large-flowered skullcap) - E Floyd, Gordon

<u>Schwalbea americana</u> (American chaffseed) - E <u>Spiraea virginiana</u> (Virginia spiraea) - T <u>Torreya taxifolia</u> (Florida torreya) - E <u>Trillium persistens</u> (persistent trillium) - E

<u>Trillium religuum</u> (relict trillium) - E

Xyris Tennesseensis (Tennessee yellow-eyed
 grass) - E

General Distribution

Greene County Elbert County

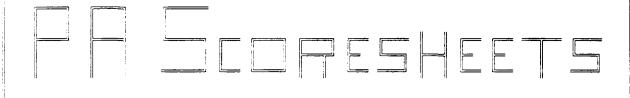
Chattooga County

Bibb, Crawford, Taylor, Talbot Counties Towns County

Floyd, Gordon, Walker
Counties
Baker, Dougherty Counties
Walker, Dade Counties
Decatur County
Tallulah-Tugaloo River
system, Rabun and Habersham
Counties
Clay, Columbia, Early,
Talbot, Lee Counties

Bartow County





Site Name: Bagcraft Corporation

CERCLIS ID No.: GAD054228432 Street Address: 18 Royal Drive

City/State/Zip: Forest Park, GA 30050

Investigator: Suzanne Quillian Agency/Organization: Halliburton NUS

Street Address: 2075 W. Park Place Blvd.

City/State: Stone Mtn., GA

Date: 04/19/93

WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations: 1 Contaminated soil Contaminated soil WQ value maximum Area 5.00E+00 sq ft 1.47E-04 1.47E-04

Ground Water Pathway Criteria List Suspected Release Are sources poorly contained? (y/n/u)Ν Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)N Is waste quantity particularly large? (y/n/u)N Is precipitation heavy? (y/n/u)N Is the infiltration rate high? (y/n/u)N Is the site located in an area of karst terrain? (y/n)N Is the subsurface highly permeable or conductive? (y/n/u)N Is drinking water drawn from a shallow aquifer? (y/n/u)N Are suspected contaminants highly mobile in ground water? (y/n/u)N Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)Other criteria? (y/n)SUSPECTED RELEASE? (y/n) Υ

Summarize the rationale for Suspected Release:

Preliminary Assessment (4/15/80) indicates that alcohols and acetates stored in a tank on site have leaked onto the ground. Stained soil of a few square feet was observed behind the facility.

Ground Water Pathway Criteria List Primary Targets	
Is any drinking water well nearby? (y/n/u)	N
Has any nearby drinking water well been closed? (y/n/u)	N
Has any nearby drinking water well user reported foul-testing or foul-smelling water? $(y/n/u)$	N
Does any nearby well have a large drawdown/high production rate? $(y/n/u)$	N
Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest contamination at a drinking water well? $(y/n/u)$	N
Does any drinking water well warrant sampling? (y/n/u)	N
Other criteria? (y/n) N	
PRIMARY TARGET(S) IDENTIFIED? (y/n)	N
Summarize the rationale for Primary Targets:	

Page: 4

GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics				Ref.			
Do you suspect a release? (y/n)	Ye	e s				
Is the site located in karst to	errain? (y/n)	No)	11,12			
Depth to aquifer (feet):		20)	2			
Distance to the nearest drinking	Distance to the nearest drinking water well (feet): 23000						
			-				
LIKELIHOOD OF RELEASE	Suspected No Suspected LIKELIHOOD OF RELEASE Release References						
1. SUSPECTED RELEASE	550						
2. NO SUSPECTED RELEASE 0							
LR =	550	0					

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION O person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	O	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	o	0	
7. RESOURCES	5	0	
Т =	5	0	

WASTE CHARACTERISTICS	WC =	18	0
GROUND WATER PATHWAY SCORE:		1	
GROUND WAIER FAIRWAI SCORE.			

Page: 5

Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist.	Population Served		Value
None				
	!			
		· · · · · · · · · · · · · · · · · · ·		
*** Note : Maximum of S	Wells Are Pr	inted ***	Total	

Secondary Target Population Distance Categories	Population Served	Reference	Value
O to 1/4 mile	0	16	0
Greater than 1/4 to 1/2 mile	0	16	0
Greater than 1/2 to 1 mile	0	16	0
Greater than 1 to 2 miles	0	16	0
Greater than 2 to 3 miles	0	16	0
Greater than 3 to 4 miles	0	16	0
		Total	0

Apportionment	Documentation	for a	Blended	System	
					;
L					

Surface Water Pathway Criteria List Suspected Release	
Is surface water nearby? (y/n/u)	N
Is waste quantity particularly large? (y/n/u)	N
Is the drainage area large? (y/n/u)	N
Is rainfall heavy? (y/n/u)	N
Is the infiltration rate low? $(y/n/u)$	N
Are sources poorly contained or prone to runoff or flooding? $(y/n/u)$	N
Is a runoff route well defined(e.g.ditch/channel to surf.water)? $(y/n/u)$	N
Is vegetation stressed along the probable runoff path? $(y/n/u)$	N
Are sediments or water unnaturally discolored? $(y/n/u)$	N
Is wildlife unnaturally absent? $(y/n/u)$	N
Has deposition of waste into surface water been observed? $(y/n/u)$	N
Is ground water discharge to surface water likely? $(y/n/u)$	N
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N
Summarize the rationale for Suspected Release:	

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Surface Water Pathway Criteria List Primary Targets	
Is any target nearby? (y/n/u) If yes: N Drinking water intake N Fishery N Sensitive environment	N
Has any intake, fishery, or recreational area been closed? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? $(y/n/u)$	N
Does any target warrant sampling? (y/n/u) If yes: N Drinking water intake N Fishery N Sensitive environment	N
Other criteria? (y/n) N	
PRIMARY INTAKE(S) IDENTIFIED? (y/n) Summarize the rationale for Primary Intakes:	N
continued	

Page: 9

continued			
Other criteria?	(y/n)	N	
		PRIMARY FISHERY(IES) IDENTIFIED? (y/n)	1
Summarize the rat	ionale for	Primary Fisheries:	
			ļ
Other criteria?	(y/n)	N	
	PRIMARY SEI	NSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) N	
Summarize the rat	ionale for	Primary Sensitive Environments:	

Page: 10

SURFACE WATER PATHWAY SCORESHEETS

Pathway Characteristics				Ref.		
Do you suspect a release? (y/n) No						
Distance to surface water (fee	t):	3	000	1,2		
Flood frequency (years):		>	500	18		
What is the downstream distance (miles) to: a. the nearest drinking water intake? b. the nearest fishery? c. the nearest sensitive environment? N.A.						
Suspected No Suspected LIKELIHOOD OF RELEASE Release Release Refer						
1. SUSPECTED RELEASE 0						
2. NO SUSPECTED RELEASE 100						
LR =	0	100	=			

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Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
 Determine the water body type, flow (if applicable), and number of people served by each drinking water intake. 			
4. PRIMARY TARGET POPULATION O person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	0	5	
T =	0	5	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body	Type/Flow	Population Served	Ref.	Value
None						
	4					
		al Primary Tal Secondary				0 0

*** Note: Maximum of 6 Intakes Are Printed ***

Page: 12

Apportionment	Documentation	for a	Blended System
1			
4			

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Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
O. SECONDARY FISHERIES	0	0	
T =	0	0	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n) Water Body Type/Flow Ref.	Value
None		
	Total Primary Fisheries Value Total Secondary Fisheries Value of 6 Fisheries Are Printed ***	0

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Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
<pre>11. Determine the water body type and flow (if applicable) for each sensitive environment.</pre>			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	0	
T =	0	0	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body	/ Type/Flow	Ref.	Value
None					
					
Total Primary Sensitive Total Secondary Sensitiv *** Note: Maximum of 6 Sensi	e Environ	ments Value		* *	0 0

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Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score	Targets(T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	100	5	18	0
Human Food Chain	100	0	18	0
Environmental	100	0	18	0

SURFACE	WATER	PATHWAY	SCORE:	0

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Soil Exposure Pathway Criteria List Resident Population	
Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? $(y/n/u)$	
Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? $(y/n/u)$	
Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u)	
Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? $(y/n/u)$	
Does any neighboring property warrant sampling? $(y/n/u)$	
Other criteria? (y/n) N	
RESIDENT POPULATION IDENTIFIED? (y/n)	
ummarize the rationale for Resident Population:	

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SOIL EXPOSURE PATHWAY SCORESHEETS

thway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	No	1,2
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	No	1,2
Is the facility active? (y/n):	Yes	1

LIKELIHOOD OF EXPOSURE		Suspected Contamination	References
1. SUSPECTED CONTAMINATION	LE =	550	

Targets

2. RESIDENT POPULATION O resident(s)	0	
0 resident(s) 0 school/daycare student(s)		
3. RESIDENT INDIVIDUAL	0	
4. WORKERS 1 - 100	5	
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	5	
T =	10	

WC =	18
RESIDENT POPULATION THREAT SCORE:	1
NEARBY POPULATION THREAT SCORE:	1
Population Within 1 Mile: 1 - 10,0	000

SOIL EXPOSURE PATHWAY SCORE:

2

Pag**e:** 18

Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
None		
Total Terrestrial Sensitive Env		

*** Note: Maximum of 7 Sensitive Environments Are Printed ***

Bagcraft Corporation - 04/29/93

Air Pathway Criteria List Suspected Release	
Are odors currently reported? (y/n/u)	N
Has release of a hazardous substance to the air been directly observed? $(y/n/u)$	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	N
Does analytical/circumstantial evidence suggest release to air? $(y/n/u)$	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N
Summarize the rationale for Suspected Release:	i
	i i

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AIR PATHWAY SCORESHEETS

thway Characteristics			Re	ef.
Do you suspect a release? (y/n	No	D 1		
Distance to the nearest individ	dual (feet):	0		1
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	Referenc	ces
1. SUSPECTED RELEASE	0			
2. NO SUSPECTED RELEASE		500		
LR =	0	500		
rgets				
TARGETS	Suspected Release	No Suspected Release	Referenc	ces
3. PRIMARY TARGET POPULATION O person(s)	0			
4. SECONDARY TARGET POPULATION	0	27		
5. NEAREST INDIVIDUAL	0	20		
6. PRIMARY SENSITIVE ENVIRONS.	0			
7. SECONDARY SENSITIVE ENVIRONS.	0	0		
8. RESOURCES	0	5		
Т =	0	52		
STE CHARACTERISTICS				
WC =	0	18		
R PATHWAY SCORE:		6		

PA-Score 2.1 Scoresheets
Bagcraft Corporation - 04/29/93

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Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	29	19	2
Greater than 0 to 1/4 mile	0	19	0
Greater than 1/4 to 1/2 mile	945	19	3
Greater than 1/2 to 1 mile	2593	19	3
Greater than 1 to 2 miles	16503	19	8
Greater than 2 to 3 miles	27800	19	4
Greater than 3 to 4 miles	43972	19	7
	Total Secondary Popu	lation Value	27

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Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
None		
Total Primary Sensitive Envi *** Note : Maximum of 7 Sensitive Environments A		

Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
None		:	
Total Secondary Se	ensitive Environmo	ents Value	

SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	1
SURFACE WATER PATHWAY SCORE:	0
SOIL EXPOSURE PATHWAY SCORE:	2
AIR PATHWAY SCORE:	6
SITE SCORE:	3

SUMMARY

1.	Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water?	er No
	If yes, identify the well(s).	
	If yes, how many people are served by the threatened well(s)? 0	
2.	Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water? A. Drinking water intake B. Fishery C. Sensitive environment (wetland, critical habitat, others)	NО NО
	If yes, identity the target(s).	
3.	Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility?	ИО
	If yes, identify the properties and estimate the associated populat	ion(s)
4.	Are there public health concerns at this site that are not addressed by PA scoring considerations?	No
	If yes, explain:	

Bagcraft Corporation - 04/29/93

REFERENCE LIST

Page: 1

OMB Approval Number: 2050-0095 Approved for Use Through: 4/95

DOTENTIAL HAS	ZAPDOMS	· · · · · · · · · · · · · · · · · · ·			II	DENTIF	ICATIO	N
POTENTIAL HAZARDOUS WASTE SITE					State: GA	_	CLIS N D05422	_
PRELIMINARY ASSESSMENT FORM					CERCLIS	Disc 03/80		Date:
1. General Site Info	ormation							
Name: Bagcraft Corporation	on			t Addre				
City: Forest Park		State: GA	Zip Co 30050	ode:	County		Co. Code: 063	Cong. Dist: 06
Latitude: Longitude: Approx. 33° 37' 46.0" 84° 23' 21.0"			Area of Site: Status of Site: 1 acres Active					
2. Owner/Operator In	nformation							
Owner: Bagcraft Corporation	on of Amer	ica	Operato same	or:				
Street Address: 3900 W. 43rd Street			Street same	Addres	ss:			
City: Chicago			City: same					
State: Zip Code: 1L 60632	Telephon (404)36			Zip same	Code:	Tele	phone:	
Type of Ownership: Private				itially en Comp	y Identi plaint	fied:		

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DOTENTAL HAZADDOUS			ID	ENTIFICAT	ION		
WASTE SITE	POTENTIAL HAZARDOUS WASTE SITE				State: GA	CERCLIS GAD054	Number: 228432
PRELIMINARY AS	SSESSMENT	FORM				Discover	y Date:
3. Site Evaluator In	formation						
Name of Evaluator: Suzanne Quillian		Agency, Hallil		nization: n NUS	:	Date Pro 04/19	
Street Address: 2075 W. Park Place Blvd.			Cit St	y: one Mtn.		···	State: GA
Name of EPA or State John McKeown	Agency Co	ontact:	ŀ	ephone: 04)347-50)65		
Street Address: 345 Courtland Street	3		Cit At	y: lanta			State: GA
4. Site Disposition	(for EPA ι	use only)				
Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommer NFRAP	ndation:		Signatur Name:	re:		
Date:	Date:			Position	ı:		

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IDENTIFICATION POTENTIAL HAZARDOUS State: CERCLIS Number: WASTE SITE GA GAD054228432 CERCLIS Discovery Date: PRELIMINARY ASSESSMENT FORM 03/80 5. General Site Characteristics Predominant Land Uses Within Site Setting: Years of Operation: 1 Mile of Site: Beginning Year: 1971 Industrial Urban Ending Year: Commercial 1993 Residential Waste Generated: Type of Site Operations: Manufacturing Onsite Plastic and/or Rubber Products Waste Deposition Authorized By: Present Owner Waste Accessible to the Public Distance to Nearest Dwelling, School, or Workplace: Feet 6. Waste Characteristics Information Quantity Tier General Types of Waste: Source Type Contaminated soil 5.00e+00 sq ft A Other: alcohols, acetates, inks Physical State of Waste as Deposited Liquid Tier Legend C = Constituent W = Wastestream V = Volume A = Area

IDENTIFICATION POTENTIAL HAZARDOUS State: CERCLIS Number: WASTE SITE GA GAD054228432 PRELIMINARY ASSESSMENT FORM CERCLIS Discovery Date: 03/80 7. Ground Water Pathway Is Ground Water Used Is There a Suspected List Secondary Target Population Served by for Drinking Water Release to Ground Ground Water Withdrawn Within 4 Miles: Water: Yes From: No Type of Ground Water 0 - 1/4 Mile 0 Wells Within 4 Miles: Have Primary Target Drinking Water Wells >1/4 - 1/2 Mile None 0 Been Identified: No >1/2 - 1 Mile Depth to >1 - 2 Miles 0 Shallowest Aquifer: 20 Feet >2 - 3 Miles 0 Nearest Designated Karst Terrain/Aquifer Wellhead Protection >3 - 4 Miles 0 Present: Area: None within 4 Miles No Total 0

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IDENTIFICATION POTENTIAL HAZARDOUS CERCLIS Number: State: WASTE SITE GA GAD054228432 PRELIMINARY ASSESSMENT FORM CERCLIS Discovery Date: 03/80 8. Surface Water Pathway Part 1 of 4 Shortest Overland Distance From Any Type of Surface Water Draining Site and 15 Miles Downstream: Source to Surface Water: Other: storm drains 3000 Feet 0.6 Miles Is there a Suspected Release to | Site is Located in: Surface Water: > 500 yr floodplain 8. Surface Water Pathway Part 2 of 4 Drinking Water Intakes Along the Surface Water Migration Path: No

Have Primary Target Drinking Water Intakes Been Identified:

Secondary Target Drinking Water Intakes: None

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POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: GA CERCLIS Number: GAD054228432

CERCLIS Discovery Date:

03/80

8. Surface Water Pathway

Part 3 of 4

Fisheries Located Along the Surface Water Migration Path: No

Have Primary Target Fisheries Been Identified: No

Secondary Target Fisheries:
None

8. Surface Water Pathway

Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) No Have Primary Target Wetlands Been Identified? (y/n) No

Secondary Target Wetlands:

None

Other Sensitive Environments Along the Surface Water Migration Path: No

Have Primary Target Sensitive Environments Been Identified: No

Secondary Target Sensitive Environments:

None

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POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: GA

CERCLIS Number: GAD054228432

CERCLIS Discovery Date:

03/80

9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination:

Number of Workers Onsite: 1 - 100

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: No

10. Air Pathway

Total Population on or Onsite		Is There a Suspected Release to Air: No
Unsite	29	
0 - 1/4 Mile	0	Wetlands Located
>1/4 - 1/2 Mile	945	Within 4 Miles of the Site: No
>1/2 - 1 Mile	2593	
>1 - 2 Miles	16503	
>2 - 3 Miles	27800	Other Sensitive Environments Located
>3 - 4 Miles	43972	Within 4 Miles of the Site: No
Total	91842	
	Į.	

Sensitive Environments Within 1/2 Mile of the Site: None

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

1117 Perimeter Center West, Suite W-212, Atlanta, Georgia 30338, (404) 392-9227, Fax. (404) 392-9289

U.S. EPA Bagcraft Corp. W.A. No. 12 Janes Janes

BVWST Project 52000.010 BVWST File C.4 June 3, 1993

Mr. Narindar Kumar Acting Chief, Site Assessment Section U.S. Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, Georgia 30365 WPB/SAS

POPULITY

JUN 3 1993

EPA - REGION IV

ATLANTA, GA

Subject:

Bagcraft Corporation Forest Park, Georgia

EPA ID No. GAD054228432

Dear Mr. Kumar:

Please find attached the draft Site Inspection Prioritization report for the Bagcraft Corporation site, located in Forest Park, Clayton County, Georgia. This SIP was prepared by Halliburton NUS. If you have any questions concerning this document, please give Jancie Hatcher or myself a call.

Sincerely,

B&V WASTE SCIENCE AND TECHNOLOGY CORP.

Hubert Wieland Project Manager

Enclosure

cc: Keith Mills, EPA CO

Doug Thompson, EPA PO



Site Inspection Prioritization Report

Bagcraft Corporation
Forest Park, Clayton County, Georgia
EPA ID No. GAD054228432
WasteLAN No. 01485

Prepared Under
Contract No. 68-W9-0055
For The
U.S. Environmental Protection Agency

Prepared By:
Halliburton NUS for B&V Waste
Science & Technology Corp.
BVWST Project No. 52012.108

MAY 17, 1993

Prepared By

Reviewed By

Approved By

Suzanne Quillian

HNUS Site Manager (

Jancie S. Hatcher

BVWST Technical Reviewer

Hubert Wieland

BVWST Project Manager

SITE INSPECTION PRIORITIZATION REPORT BAGCRAFT CORPORATION FOREST PARK, CLAYTON COUNTY, GEORGIA

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SITE ASSESSMENT

Site Inspection Prioritization Bagcraft Corporation

Forest Park, Clayton County, Georgia
EPA ID No. GAD054228432

WasteLAN No. 01485

1.0 Introduction

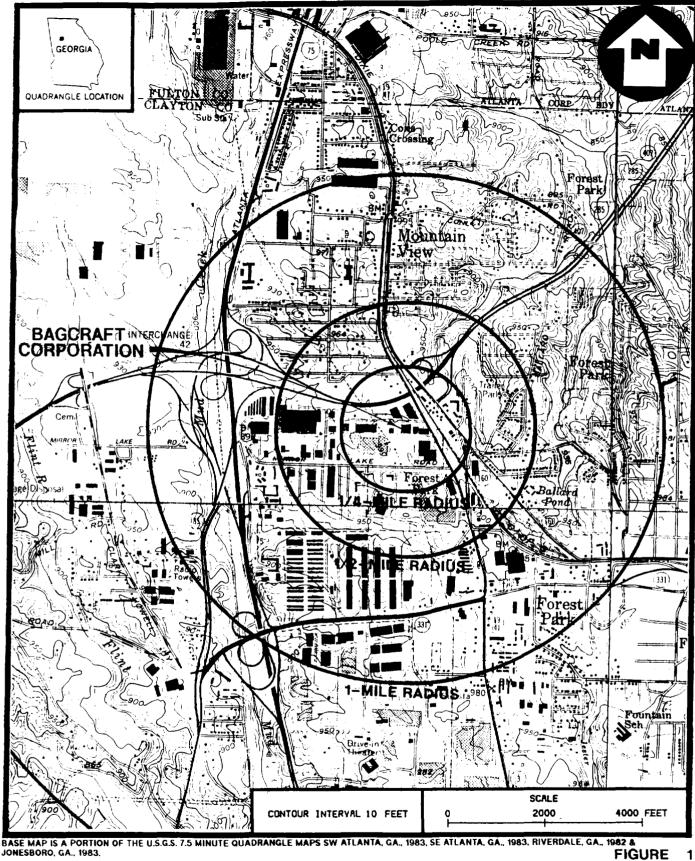
Halliburton NUS Corporation was tasked by B & V Waste Science and Technology Corporation under U.S. EPA Contract No. 68-W9-0055 to conduct a Site Inspection Prioritization (SIP) for Bagcraft Corporation in Forest Park, Clayton County, Georgia. This study was performed under the authorization of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments Reauthorization Act of 1986 (SARA).

The SIP will update the Preliminary Assessment and Site Inspection reports completed by the U.S. EPA, by utilizing the Hazard Ranking System (HRS). Other sources of information used during the evaluation include U.S. EPA CERCLA file material and available state information from the Georgia Environmental Protection Division (EPD) Office of the Department of Natural Resources. The SIP will quantify the threats posed by the site and provide sufficient documentation in order to decide on the appropriate future course of action.

2.0 Site Description and History

Bagcraft Corporation is located less than 0.25 mile from Interstates 285 and 75 off of Old Dixie Highway at 18 Royal Drive in Forest Park, Clayton County, Georgia (Refs. 1, p. 2; 2). The geographical coordinates of the facility are 33° 37′ 46″ N latitude and 84° 23′ 21″ W longitude (Ref. 2). The site location and site layout are shown in Figures 1 and 2. The average annual precipitation for Forest Park, Clayton County, Georgia, is 48 inches, and the mean annual lake pan evaporation is 41 inches, yielding a net precipitation of 7 inches (Ref. 3, pp. 43, 63). The 2-year, 24-hour rainfall for the area is 3.5 inches (Ref. 4, p. 95).

Bagcraft Corporation is located in a heavily trafficked industrial/commercial area of Forest Park, Clayton County, Georgia (Refs. 1, p. 3; 2). The facility, which is currently active, is composed of one brick building located on a 1.3-acre tract and is owned by Bagcraft Corporation of America in Chicago, Illinois (Refs. 1, p. 2; 5). The facility is bordered to the north by an abandoned brick building,

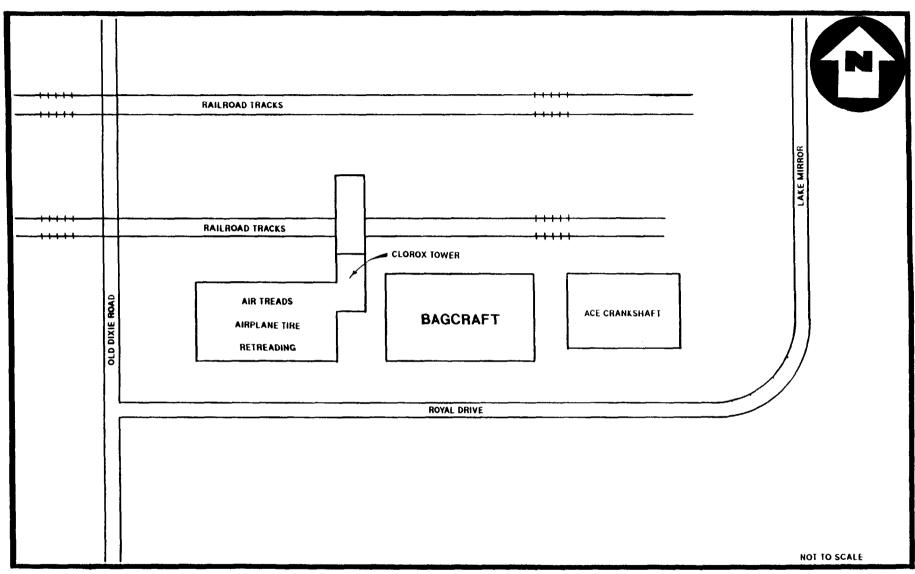


SITE LOCATION MAP

BAGCRAFT CORPORATION

FOREST PARK, CLAYTON COUNTY, GEORGIA





FIGURE

SITE LAYOUT MAP

BAGCRAFT CORPORATION
FOREST PARK, CLAYTON COUNTY, GEORGIA



to the east by Air Treads (an airplane tire manufacturer), to the west by ACE Crankshaft, and to the south by railroad tracks (Ref. 1, pp. 2, 3). Storm drains and drainage ditches are located all along Royal Drive and would collect any runoff from Bagcraft Corporation and the other facilities in the area (Ref. 1, p. 3). During the facility reconnaissance on April 8, 1993, the facility was very tidy and secure; no areas of past or present waste disposal or leakage were observed (Ref. 1, p. 4).

Bagcraft Corporation manufactures flexible packaging material to produce various types of bags and employs 29 workers (Refs. 6, p. 127; 7). The facility was first identified under CERCLA on March 26, 1980, following a citizen complaint that the facility was dumping inks, alcohols, and acetates on the ground (Refs. 8, 9).

A Preliminary Assessment (PA) was conducted by the U.S. EPA on April 15, 1980. During the PA, it was noted that alcohols and acetates stored in a tank were leaking into the saturated ground and that some ink disposal had occurred on site. In addition, waste material was being stored in drums at the facility (Ref. 9). Runoff at this time was directed from the storage area to the railroad tracks in back of the facility (Refs. 8, 9). Concurrently, a Site Inspection (SI) Report (4/16/80) was prepared by the U.S. EPA and stated that a milky white substance, contaminated soil (stains), ethyl acetate, and 40 barrels were observed on the side of the facility building (Ref. 7). The SI concluded that there was no evidence of ongoing hazardous waste disposal, but some drum spillage was noted adjacent to the building and a few square feet of stained soil was observed (Ref. 7). On April 16, 1980, a Final Strategy Determination was prepared by the U.S. EPA. The report recommended that no further action was needed at the facility because the minor problems noted at the facility during the PA and SI were too small to present a threat to human health or the environment (Ref. 10). According to available file material, no sampling has been recommended for or conducted at the facility.

3.0 Groundwater Pathway

3.1 Hydrogeologic Setting

Bagcraft Corporation is located in the southern Piedmont belt of the Piedmont physiographic province (Ref. 11, p. 9). Underlying the facility are surficial deposits of residual soil and weathered rock which overlie the fractured bedrock of the Camp Creek Formation (Refs. 11, plates I, Ib; 12, pp. 8, 9). The Camp Creek Formation consists of a massive granite gneiss interlayered with hornblende-plagioclase amphibolite, and it is part of the Atlanta Group, a large synclinal stratigraphic succession of rocks that trend northeast-southwest across the greater Atlanta area (Ref. 11, pp. 23, 42, 87). The aquifer of concern in the area is the unconfined residual soil/crystalline rock aquifer system (Ref. 13, pp. 12, 13). Groundwater is contained within the pore spaces of the surficial

deposits and in the joints, fractures, and other secondary openings in the bedrock (Ref. 12, p. 8). Hydraulic conductivity values for the surficial deposits are estimated to range from 1 x 10⁻⁵ to 1 x 10⁻⁷ cm/sec (Ref. 14, p. 29). The depth to the water table is highly dependent on topography and changes in precipitation (Ref. 12, pp. 8, 9). Based on an analysis of a topographic map of the area surrounding Bagcraft Corporation, the depth to groundwater is estimated to range from 20 to 40 feet below land surface (Ref. 2). Wells drilled in this area typically yield at least 50 gallons per minute (Ref. 15, p. 39). The direction of groundwater flow is generally toward streams and rivers and thus should flow to the southeast (Refs. 2; 12, p. 9).

3.2 Groundwater Pathway Targets

There is no known use of groundwater for drinking, irrigation, or other agricultural purposes in the study area. No private wells have been identified (Ref. 16).

4.0 Surface Water Pathway

4.1 Hydrologic Setting

Surface water runoff from Bagcraft Corporation would either be directed to storm drains which are located all along Royal Road, or it would percolate into the ground. The storm drain system in this area follows the contours of the land to the nearest surface water body; however, the storm drains do not work as intended because they are blocked and caved in. Flooding occurs during heavy rains, and the water either percolates into the gound or evaporates (Ref. 17). No other viable surface water pathway can be identified because the facility is located in an industrial area bounded by railroad tracks and Interstates 285 and 75 (Refs. 1, p. 3; 2). In addition, the facility is located outside the 500-year flood plain (Ref. 18).

4.2 Surface Water Targets

There is no surface water pathway for this facility; therefore, targets were not evaluated (Refs. 1, p. 3; 2).

5.0 Soil Exposure and Air Pathways

5.1 Physical Conditions

Bagcraft Corporation is located in an industrial/commercial area in Forest Park, Georgia. Hartsfield International Airport is located within 1 mile of the facility. During a reconnaissance on April 8, 1993, the facility was found to be secure and tidy in appearance, although access to the property surrounding the building is possible. No stained soil, drums, or other indications of waste-handling problems were observed. There are no schools or day-care centers within 1 mile of the facility. Also, no houses were observed within 0.5 mile during the reconnaissance (Ref. 1, pp. 2-4).

5.2 Soil and Air Targets

According to U.S. Bureau of the Census data (GEMS, 1980), there are 945 people located within 0.5 mile of the facility, 2,593 people within 0.5 to 1 mile, 16,503 people within 1 to 2 miles, 27,800 people within 2 to 3 miles, and 43,972 people within 3 to 4 miles (Ref. 19). In addition, 29 workers are employed at the Bagcraft facility (Ref. 6). No sensitive environments have been identified within 4 miles of the facility (Refs. 20, 21).

6.0 Conclusions and Recommendations

The Bagcraft Corporation facility was evaluated to assess the threat posed to human health and the environment and to determine the need for additional investigation. From the information gathered in the study of Bagcraft Corporation, it is recommended that no further action be taken for this facility.

REFERENCES

- 1. Halliburton NUS Corporation Logbook No. A-0064 for Bagcraft Corporation, BVWST Project No. 52012.108. Documentation of facility reconnaissance, April 8, 1993.
- 2. U.S. Geological Survey, 7.5 minute series topographic quadrangle maps of Georgia: Southeast Atlanta 1954 (photorevised (PR) 1983), Southwest Atlanta 1954 (PR 1983), Jonesboro 1954 (PR 1983), Riverdale 1954 (PR 1983), scale 1:24,000.
- 3. U.S. Department of Commerce, <u>Climatic Atlas of the United States</u> (Washington, D.C.: GPO, 1983).
- 4. U.S. Department of Commerce, <u>Rainfall Frequency Atlas of the United States</u>, Technical Paper Number 40 (Washington, D.C.: GPO, 1961).
- 5. Clerk, Clayton County Tax Assessor's Office, telephone conversation with Suzanne Quillian, Halliburton NUS Corporation, April 19, 1983. Subject: Property ownership and size.
- 6. <u>Georgia Manufacturing Directory 1991-92</u> (Atlanta, Georgia: Georgia Department of Industry, Trade and Tourism, 1991), p. 127.
- 7. Potential Hazardous Waste Site, Site Inspection Report (EPA Form T2070-3) for Bagcraft Corporation. Filed by David Brentzel, U.S. EPA, April 15, 1980.
- 8. Potential Hazardous Waste Site Log (EPA Form T2070-1) with attached summary for Bagcraft Corporation. Filed by R. Ferrazzuolo, U.S. EPA, date unknown.
- 9. Potential Hazardous Waste Site Identification and Preliminary Assessment (EPA Form T2070-2) for Bagcraft Corporation. Filed by R. Ferrazzuolo, U.S. EPA, April 15, 1980.
- 10. Potential Hazardous Waste Site Final Strategy Determination (EPA Form T2070-5) for Bagcraft Corporation. Filed by R. Ferrazzuolo, U.S. EPA, April 16, 1980.
- 11. Keith McConnell and Charlotte Abrams, <u>Geology of the Greater Atlanta Region</u>, Bulletin 96 (Georgia Geologic Survey, 1984).

- 12. H.E. LeGrand, <u>Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States</u>, Circular 538 (Washington, D.C.: GPO, 1967).
- 13. U.S. Geological Survey, <u>Ground-Water Data for Georgia</u>, 1987, Open-File Report 88-323, 1988.
- 14. R. Allan Freeze and John A. Cherry, Groundwater (Englewood Cliffs, N.J.: Prentice Hall, 1979).
- 15. C.W. Cressler, C.J. Thurmond, and W.G. Hester, <u>Groundwater in the Greater Atlanta Region</u>, <u>Georgia</u>, Circular 63 (Georgia Geologic Survey, 1983).
- 16. Gilbert Peeples, Director, Clayton County Water Department, telephone conversation with Suzanne Quillian, Halliburton NUS Corporation, April 6, 1993. Subject: Water use in the Forest Park, Clayton County, and Atlanta areas.
- 17. Russell Morehead, Clayton County Public Works Department, telephone conversation with Suzanne Quillian, Halliburton NUS Corporation, April 28, 1993. Subject: Drainage system in the study area.
- 18. Federal Emergency Management Agency (FEMA), National Flood Insurance Program, Flood Insurance Rate Map, Community-panel number: 130041 0060 C, map revised November 6, 1991, Clayton County, Georgia.
- 19. U.S. Environmental Protection Agency, <u>Graphical Exposure Modeling Systems (GEMS) Data Base</u>. Compiled from U.S. Bureau of the Census data (1980).
- 20. Georgia Department of Natural Resources, Freshwater Wetlands and Heritage Inventory Database, Southwest Atlanta, Southeast Atlanta, Jonesboro, and Riverdale quads, July 1990.
- 21. U.S. Fish and Wildlife Service, Southeast Region, <u>Endangered and Threatened Species of the Southeastern United States (The Red Book)</u> (Atlanta, Georgia, January 1992).

CONFIDENTIAL HAZARD RANKING SYSTEM PRELIMINARY SCORE FOR BAGCRAFT CORPORATION FOREST PARK, CLAYTON COUNTY, GEORGIA

This preliminary score was calculated using the PA-Score worksheets. All four pathways are evaluated.

The following score reflects a hazardous waste quantity of 18, as the area of contaminated soil is approximately 5 square feet. No sampling has been conducted at this facility.

In 1980, there was a report of leaking alcohol and acetate tanks and ink disposal on the ground, but there are no viable groundwater targets. Groundwater is not used for drinking, irrigation, or other agricultural purposes in the study area.

There is no viable surface water pathway because the facility is surrounded by storm drains, railroad tracks, and two major interstate highways. The storm drainage system in the area does not work as intended, and flooding occurs during heavy rains. Therefore, runoff would percolate into the ground or evaporate.

The soil and air pathways are of minor concern because there are only 29 workers at the facility and 3,538 people who live within 1 mile. The facility property may be accessed but probably not very easily.

Due to the lack of targets and viable pathways associated with the facility, no further action is recommended.

 $S_{gw} = 1$ $S_{sw} = 0$ $S_{so} = 2$

 $S_a = 6$

OVERALL SCORE = 3





Site Name: Bagcraft Corporation

CERCLIS ID No.: GAD054228432 Street Address: 18 Royal Drive

City/State/Zip: Forest Park, GA 30050

Investigator: Suzanne Quillian Agency/Organization: Halliburton NUS

Street Address: 2075 W. Park Place Blvd.

City/State: Stone Mtn., GA

Date: 04/19/93

Page: 1

WASTE CHARACTERISTICS

VASIE CHARACIERISTICS			
Waste Characteristics	(WC) Calculations:		
1 Contaminated soil	Contaminated soil	WQ value	maximum
Area	5.00E+00 sq ft	1.47E-04	1.47E-04
			i
			į
			:
			į

** Only First WC Page Is Printed ** | Waste Characteristics Score: WC = 18

Ground Water Pathway Criteria List Suspected Release Are sources poorly contained? (y/n/u)Y Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)N Is waste quantity particularly large? (y/n/u)N Is precipitation heavy? (y/n/u)N Is the infiltration rate high? (y/n/u)N Is the site located in an area of karst terrain? (y/n)N Is the subsurface highly permeable or conductive? (y/n/u)N Is drinking water drawn from a shallow aquifer? (y/n/u)N Are suspected contaminants highly mobile in ground water? (y/n/u)N Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)Other criteria? (y/n)Ν SUSPECTED RELEASE? (y/n)Y Summarize the rationale for Suspected Release: Preliminary Assessment (4/15/80) indicates that alcohols and acetates stored in a tank on site have leaked onto the ground.

Stained soil of a few square feet was observed behind the facility.

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Ground Water Pathway Criteria List Primary Targets	
Is any drinking water well nearby? (y/n/u)	N
Has any nearby drinking water well been closed? $(y/n/u)$	N
Has any nearby drinking water well user reported foul-testing or foul-smelling water? $(y/n/u)$	N
Does any nearby well have a large drawdown/high production rate? (y/n/u)	N
Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest contamination at a drinking water well? $(y/n/u)$	N
Does any drinking water well warrant sampling? $(y/n/u)$	N
Other criteria? (y/n) N	
Summarize the rationale for Primary Targets:	

Page: 4

GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics					
Do you suspect a release? (y/n)	Ye	es		
Is the site located in karst terrain? (y/n)				11,12	
Depth to aquifer (feet):					
Distance to the nearest drinking water well (feet): 23000					
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References		
1. SUSPECTED RELEASE	550				
2. NO SUSPECTED RELEASE		0			
LR =	550	0			

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION O person(s)	0		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	o	0	
5. NEAREST WELL	0	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	5	0	
T =	5	0	

WASTE CHARACTERISTICS	WC =	18	0
GROUND WATER PATHWAY SCORE:		1	

Page: 5

Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist. (miles)	Population Served	Reference	Value
None				
*** Note : Maximum of 5 Wells Are Printed *** Total				

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0	16	О
Greater than 1/4 to 1/2 mile	0	16	0
Greater than 1/2 to 1 mile	0	16	0
Greater than 1 to 2 miles	0	16	0
Greater than 2 to 3 miles	0	16	0
Greater than 3 to 4 miles	0	16	0
3238		Total	0

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Apportionment	Documentation	for a	Blended	System
				,

Surface Water Pathway Criteria List Suspected Release Is surface water nearby? (y/n/u)Is waste quantity particularly large? (y/n/u)N Is the drainage area large? (y/n/u)N Is rainfall heavy? (y/n/u) N Is the infiltration rate low? (y/n/u)N Are sources poorly contained or prone to runoff or flooding? (y/n/u)N Is a runoff route well defined (e.g. ditch/channel to surf. water)? (y/n/u) N Is vegetation stressed along the probable runoff path? (y/n/u)N Are sediments or water unnaturally discolored? (y/n/u)N Is wildlife unnaturally absent? (y/n/u)N Has deposition of waste into surface water been observed? (y/n/u)N Is ground water discharge to surface water likely? (y/n/u)Ν Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)N Other criteria? (y/n)N SUSPECTED RELEASE? (y/n)N Summarize the rationale for Suspected Release:

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Surface Water Pathway Criteria List Primary Targets	
Is any target nearby? (y/n/u) If yes: N Drinking water intake N Fishery N Sensitive environment	N
Has any intake, fishery, or recreational area been closed? $(y/n/u)$	N
Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? $(y/n/u)$	N
Does any target warrant sampling? (y/n/u) If yes: N Drinking water intake N Fishery N Sensitive environment	N
Other criteria? (y/n) N	
Summarize the rationale for Primary Intakes:	
continued	

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		 -
continued		
Other criteria? (y/n)	N	
	PRIMARY FISHERY(IES) IDENTIFIED? (y/n)	N
Summarize the rationale for	Primary Fisheries:	
211 (1-21-0 /1-1-)		
Other criteria? (y/n)	N	
	NSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n)	N
Summarize the rationale for	Primary Sensitive Environments:	
		i

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SURFACE WATER PATHWAY SCORESHEETS

Pathway Characteristics					
Do you suspect a release? (y/n	N	0			
Distance to surface water (fee	t):	3	000	1,2	
Flood frequency (years):		>	500	18	
What is the downstream distance (miles) to: a. the nearest drinking water intake? b. the nearest fishery? c. the nearest sensitive environment? N.A.					
Suspected No Suspected LIKELIHOOD OF RELEASE Release Refe					
1. SUSPECTED RELEASE					
2. NO SUSPECTED RELEASE	100				
LR =	100				

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Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION O person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	0	
7. RESOURCES	0	5	
T =	0	5	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water	Body	Type/Flow	Population Served	Ref.	Value
None							
Total Primary Target Population Value Total Secondary Target Population Value						0	

*** Note: Maximum of 6 Intakes Are Printed ***

Apportionment	Documentation	for a	Blended	System
7.70				
				1

Page: 13

Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	0	0	
Т =	0	0	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body	Type/Flow	Ref.	Value
None					
Total Primary Fisheries Value Total Secondary Fisheries Value					0 0

*** Note : Maximum of 6 Fisheries Are Printed ***

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Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	0	
Т =	0	0	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Valu
None				
				-
Total Primary Sensitive Environments Value				
Total Secondary Sensitive Environments Value				

*** Note: Maximum of 6 Sensitive Environments Are Printed ***

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Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score	Targets(T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	100	5	18	0
Human Food Chain	100	0	18	0
Environmental	100	0	18	0

SURFACE WATER PATHWAY SCORE: 0

Soil Exposure Pathway Criteria L Resident Population	ist
Is any residence, school, or daycare facility on within 200 feet of an area of suspected contami	
Is any residence, school, or daycare facility loc land previously owned or leased by the site own	
Is there a migration route that might spread haza substances near residences, schools, or daycare	
Have onsite or adjacent residents or students rephealth effects, exclusive of apparent drinking contamination problems? $(y/n/u)$.	
Does any neighboring property warrant sampling? (y/n/u)
Other criteria? (y/n) N ,	
RESIDENT POPULATION	IDENTIFIED? (y/n)

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SOIL EXPOSURE PATHWAY SCORESHEETS

Pathway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	No	1,2
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	No	1,2
Is the facility active? (y/n):	Yes	1

LIKELIHOOD OF EXPOSURE		Suspected Contamination	References
1. SUSPECTED CONTAMINATION	LE =	550	

Targets

2. RESIDENT POPULATION 0 resident(s)	0	
0 school/daycare student(s)		
3. RESIDENT INDIVIDUAL	0	
4. WORKERS 1 - 100	5	
5. TERRES. SENSITIVE ENVIRONMENTS	0	
6. RESOURCES	5	
т =	10	

WASTE CHARACTER	Ι	Ι.	ST	Ί	cs
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WC = 18

RESIDENT POPULATION THREAT SCORE:

1

NEARBY POPULATION THREAT SCORE:

1

Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE:

2

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Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
None		
		10
		·

*** Note: Maximum of 7 Sensitive Environments Are Printed ***

Air Pathway Criteria List	
Suspected Release	
Are odors currently reported? (y/n/u)	N
Has release of a hazardous substance to the air	
been directly observed? $(y/n/u)$	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration	
of hazardous substances through the air? $(y/n/u)$	N
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N
Summarize the rationale for Suspected Release:	

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AIR PATHWAY SCORESHEETS

thway Characteristics				
Do you suspect a release? (y/n	No	0		
Distance to the nearest individual (feet): 0				
LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	Refe	rences
1. SUSPECTED RELEASE	0			
2. NO SUSPECTED RELEASE		500		
LR =	0	500		
argets			1	

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION O person(s)	0		
4. SECONDARY TARGET POPULATION	0	27	
5. NEAREST INDIVIDUAL	0	20	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	0	
8. RESOURCES	0	5	
Т =	0	52	

WASTE CHARACTERISTICS	WΑ	STE	CHA	RAC	TER	IST	CICS
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MC =	0	18

AIR PATHWAY SCORE:

6

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Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	29	19	2
Greater than 0 to 1/4 mile	0	19	0
Greater than 1/4 to 1/2 mile	945	19	3
Greater than 1/2 to 1 mile	2593	19	3
Greater than 1 to 2 miles	16503	19	8
Greater than 2 to 3 miles	27800	19	4
Greater than 3 to 4 miles	43972	19	7
	Total Secondary Popula	ation Value	27

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Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
None		
Total Primary Sensitive Environment*** Note: Maximum of 7 Sensitive Environments Are Pr		

*** Note: Maximum of 7 Sensitive Environments Are Printed***
Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
None			
		I	

Total Secondary Sensitive Environments Value

SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	1
SURFACE WATER PATHWAY SCORE:	o
SOIL EXPOSURE PATHWAY SCORE:	2
AIR PATHWAY SCORE:	6
SITE SCORE:	3

SUMMARY

1.	Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? If yes, identify the well(s).	er No
	If yes, how many people are served by the threatened well(s)? 0	
2.	Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water? A. Drinking water intake B. Fishery C. Sensitive environment (wetland, critical habitat, others)	No No No
	If yes, identity the target(s).	
3.	Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility?	No
	If yes, identify the properties and estimate the associated populat	
4.	Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:	No

REFERENCE LIST

Page: 1

OMB Approval Number: 2050-0095 Approved for Use Through: 4/95

IDENTIFICATION POTENTIAL HAZARDOUS State: CERCLIS Number: WASTE SITE GAD054228432 GΑ CERCLIS Discovery Date: PRELIMINARY ASSESSMENT FORM 03/80 1. General Site Information Street Address: Name: Bagcraft Corporation 18 Royal Drive Zip Code: State: County: City: Co. Conq. Forest Park 30050 GA Clayton Code: Dist: 063 06 Approx. Area of Site: Latitude: Longitude: Status of Site: 33° 37' 46.0" 84° 23' 21.0" Active acres 2. Owner/Operator Information Owner: Operator: Bagcraft Corporation of America same Street Address: Street Address: 3900 W. 43rd Street same City: City: Chicago same Zip Code: State: State: Zip Code: Telephone: Telephone: 60632 (404)363-6116 ILILsame same How Initially Identified: Type of Ownership: Private Citizen Complaint

DOMENMET AT 112 CA	ADDONG				IDI	ENTIFICAT	ION
POTENTIAL HAZA WASTE SITE	ARDOUS				State: GA	CERCLIS GAD0542	
PRELIMINARY AS	SSESSMENT	FORM				Discovery	y Date:
3. Site Evaluator Inf	formation						
Name of Evaluator: Suzanne Quillian		Agency, Hallil		anization: on NUS		Date Pro 04/19	
Street Address: 2075 W. Park Place E	31vd.		Cit St	y: cone Mtn.			State: GA
Name of EPA or State John McKeown	Agency Co	ontact:		Lephone: 104)347-50)65		
Street Address: 345 Courtland Street	5		Cit At	y: clanta			State: GA
4. Site Disposition ((for EPA ι	use only))				
Emergency Response/Removal Assessment Recommendation: No	CERCLIS Recommen	ndation:		Signatur Name:	e:		
Date:	Date:			Position	n:		

Page: 3

IDENTIFICATION POTENTIAL HAZARDOUS CERCLIS Number: State: GAD054228432 WASTE SITE GA CERCLIS Discovery Date: PRELIMINARY ASSESSMENT FORM 03/80 5. General Site Characteristics Predominant Land Uses Within Site Setting: Years of Operation: 1 Mile of Site: Beginning Year: 1971 Industrial Urban Ending Year: Commercial 1993 Residential Waste Generated: Type of Site Operations: Manufacturing Onsite Plastic and/or Rubber Products Waste Deposition Authorized By: Present Owner Waste Accessible to the Public Distance to Nearest Dwelling, School, or Workplace: 0 Feet 6. Waste Characteristics Information Tier General Types of Waste: Source Type Ouantity Contaminated soil 5.00e+00 sq ft A Other: alcohols, acetates, inks Physical State of Waste as Deposited Liquid Tier Legend C = Constituent W = Wastestream V = Volume A = Area

POTENTIAL HAZARDO	oue	ID	ENTIFICATI	ON
WASTE SITE	<i>7</i> 03	State: GA	CERCLIS GAD0542	
PRELIMINARY ASSES	SSMENT FORM		Discovery 03/80	Date:
7. Ground Water Pathway				
Is Ground Water Used for Drinking Water Within 4 Miles: No	Is There a Suspected Release to Ground Water: Yes	Population	ondary Tar on Served ater Withd	by
Type of Ground Water Wells Within 4 Miles: None	Have Primary Target Drinking Water Wells Been Identified: No	0 - 1, >1/4 - 1, >1/2 - 1		o o o
Depth to Shallowest Aquifer: 20 Feet Karst Terrain/Aquifer Present: No	Nearest Designated Wellhead Protection Area: None within 4 Miles	>2 - 3	Miles Miles Miles	0 0 0

Page: 5

IDENTIFICATION POTENTIAL HAZARDOUS State: CERCLIS Number: WASTE SITE GAD054228432 GA PRELIMINARY ASSESSMENT FORM CERCLIS Discovery Date: 03/80 Part 1 of 4 8. Surface Water Pathway Shortest Overland Distance From Any Type of Surface Water Draining Site and 15 Miles Downstream: Source to Surface Water: Other: storm drains 3000 Feet 0.6 Miles Is there a Suspected Release to Site is Located in: Surface Water: > 500 yr floodplain

8. Surface Water Pathway

Part 2 of 4

Drinking Water Intakes Along the Surface Water Migration Path: No Have Primary Target Drinking Water Intakes Been Identified: No

Secondary Target Drinking Water Intakes:
None

Page: 6

POTENTIAL HAZARDOUS

WASTE SITE

PRELIMINARY ASSESSMENT FORM

IDENTIFICATION

State: GA

CERCLIS Number: GAD054228432

CERCLIS Discovery Date:

03/80

8. Surface Water Pathway

Part 3 of 4

Fisheries Located Along the Surface Water Migration Path:

Have Primary Target Fisheries Been Identified:

Secondary Target Fisheries: None

8. Surface Water Pathway

Part 4 of 4

Wetlands Located Along the Surface Water Migration Path? (y/n) No

Have Primary Target Wetlands Been Identified? (y/n)

Secondary Target Wetlands: None

Other Sensitive Environments Along the Surface Water Migration Path: No

Have Primary Target Sensitive Environments Been Identified:

Secondary Target Sensitive Environments:

None

Page: 7

POTENTIAL HAZARDOUS

WASTE SITE

State: GA

CERCLIS Number: GAD054228432

PRELIMINARY ASSESSMENT FORM

CERCLIS Discovery Date:

IDENTIFICATION

03/80

9. Soil Exposure Pathway

Are People Occupying Residences or Attending School or Daycare on or Within 200 Feet of Areas of Known or Suspected Contamination:

Number of Workers Onsite: 1 - 100

Have Terrestrial Sensitive Environments Been Identified on or Within 200 Feet of Areas of Known or Suspected Contamination: No

10. Air Pathway

Total Population on or Wi Onsite	thin:	Is There a Suspected Release to Air:	No
0 - 1/4 Mile >1/4 - 1/2 Mile >1/2 - 1 Mile 2	0 945 593	Wetlands Located Within 4 Miles of the Site:	No
>2 - 3 Miles 27 >3 - 4 Miles 43	503 800 972 842	Other Sensitive Environments Located Within 4 Miles of the Site:	No

Sensitive Environments Within 1/2 Mile of the Site: None

Literis the Paris

LEVEL Notebook No. 311

DOG HANDER

Corporation

They be County, 6A

A D054228432

Abject Manager : Suzanne Quillian

Marin Andria

"Rite in the Rain" - A unique All-Weather Writing Paper created to shed water and enhance the written image. It is widely used flyraughout the world for recognition critical field data in all kinds of weather.

Available in a variety of standard and custom printed case-bound field books, loose leaf, spiral and stapled notabbooks, multi-copy sets and computer papers.

"Rite in the Rain" All-Weather Writing Papers are also available in a wide selection of rolls and sheets for printing and photocopying.

a product o

J. L. DARLING CORPORATION TACOMA, WA 98421-3696 USA

Eb/8/H Land Sorne Ovilling

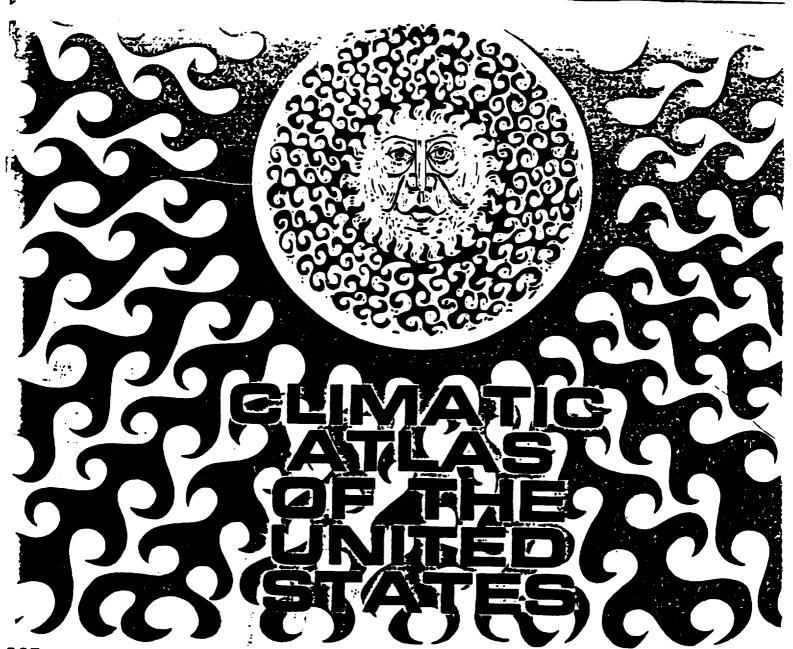
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3, RAILBOAD TRACKS CLONOX TOWER BAGCRAFT

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RCE . Environmental Science Services Administration . Environmental Data Service



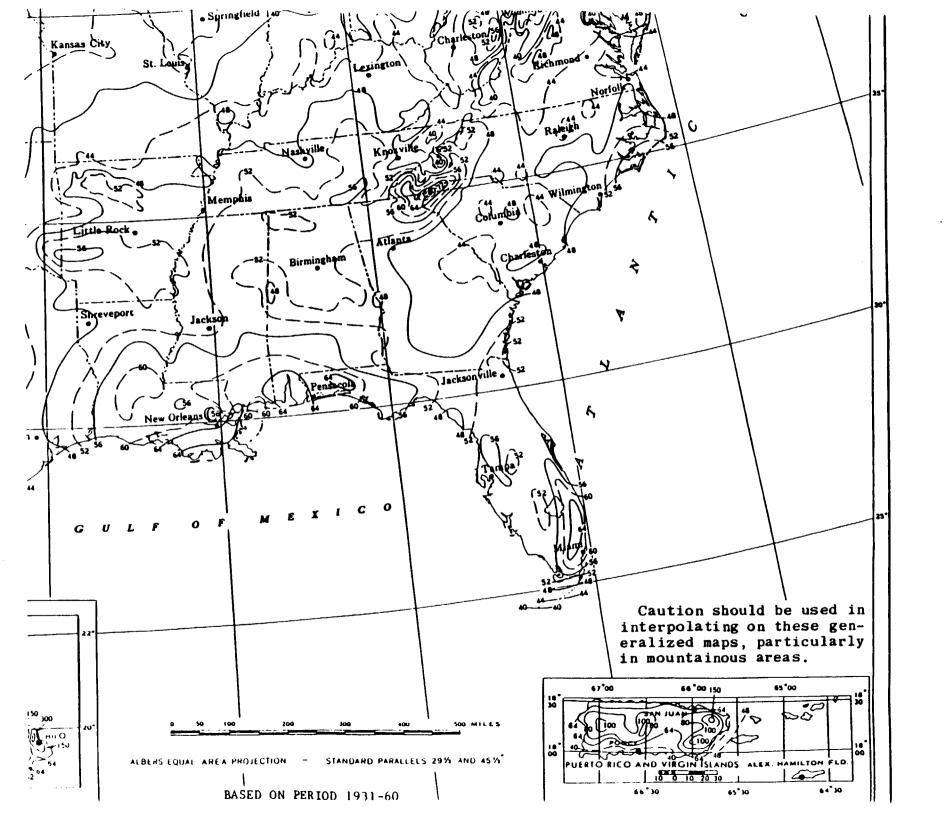
U.S. DEPARTMENT OF COMMERCE C. R. Smith, Secretary

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION Robert M. White, Administrator

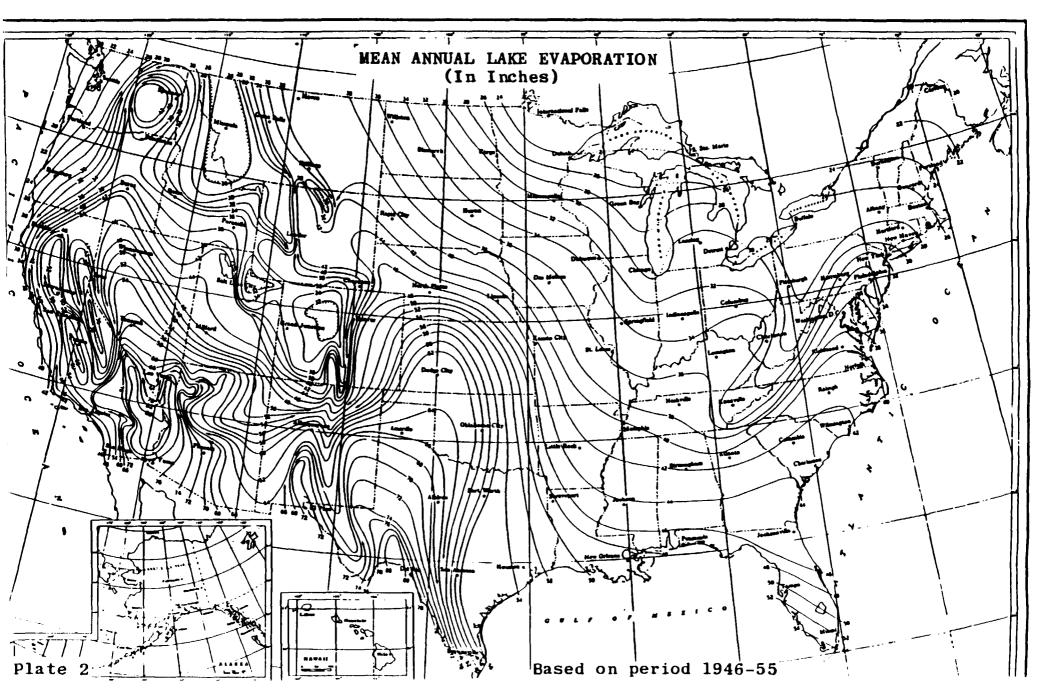
ENVIRONMENTAL DATA SERVICE Woodrow C. Jacobs, Director

JUNE 1968

REPRINTED BY THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
1983



4KE EVAPORATION



TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by DAVID M. BERNSHERED , Compressive Studies Sections By-desiral Section Bilidies

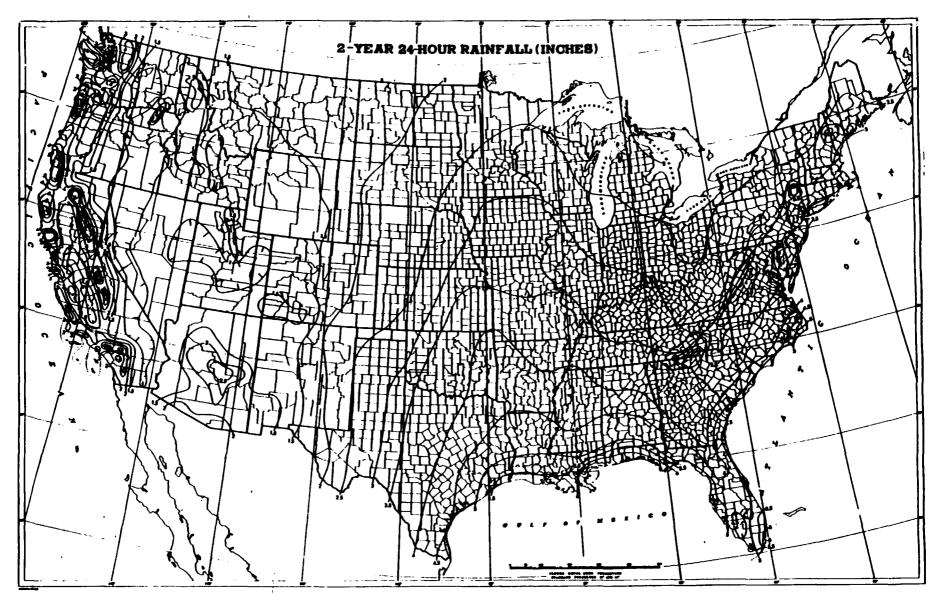
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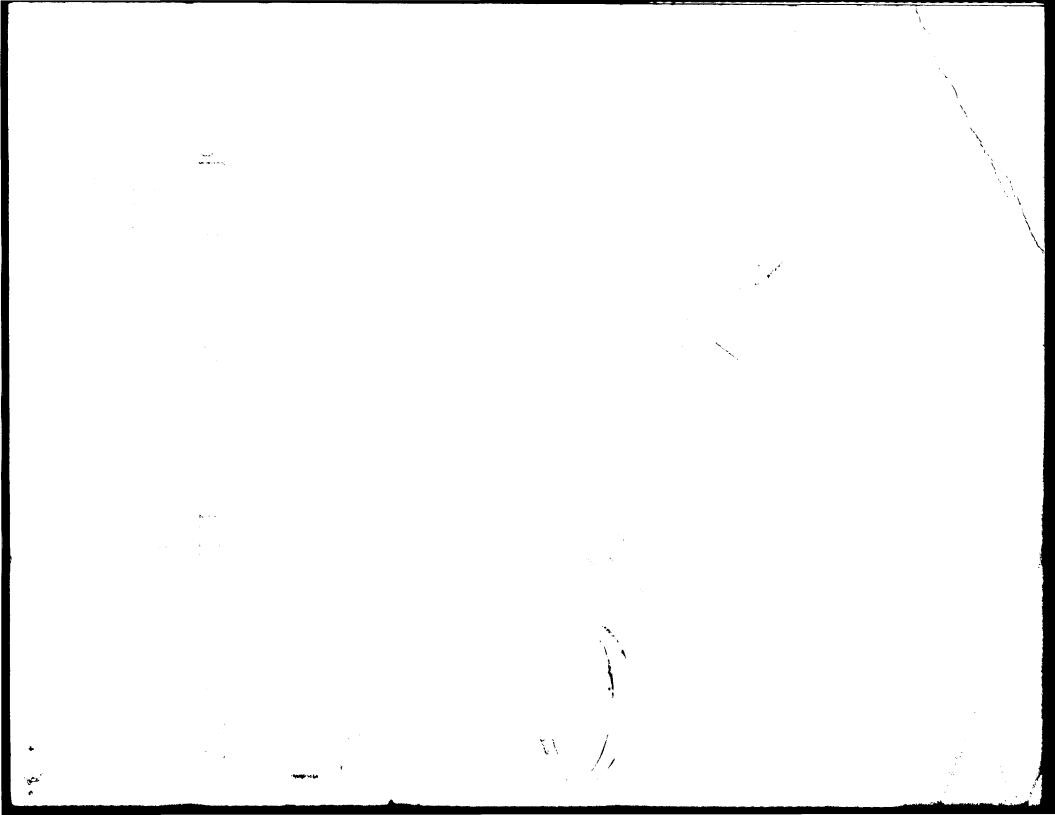


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REFERENCE 5

	RATION	TELECON NOTE
CONTROL NO.	DATE: 4/19/93	TIME: 1100
DISTRIBUTION:	<u>-</u>	
BETWEEN: Clerk	OF: Clayton County Tax Assessor's	PHONE: (404) 477-4566
AND: Suzanne Quillian	Office	
3900 W. 43rd Street Chicago, Illinois 60632 is the owner of the 1.3-acre prop County, Georgia 30050	perty occupied by Bagcraft Corporation at 18 f	Royal Drive, Forest Park, Clayton



GEORGIA MANUFACTURING DIRECTORY 1991-92



Published by the Georgia Department of Industry, Trade and Tourism 1100 Marquis Two Tower 285 Peachtree Center Ave. P.O. Box 1776, Atlanta, Georgia 30301-1776

Deborah D. Battle, Editor Amy Nease, Assistant Editor

72	PEACH INDUSTRIAL CORP. 5192 Hwy. 42 P.O. Box 45305. Atlanta 30320 Date Est 1985 Market International Tim Adamson, Pres. Aurcath Refueling Trucks Generator Sets Phone 404-960-1000 Fax 404-366-7710 Emp. 9M. 2F. 11T	3713 3621	BAGS BY FRANCES, INC. 4312 Old Jonesboro P O. Box 217 30051 Date Est 1953 Market Internate F D O'Neal, Pres. Children's Harls Children's Handbags Millinery Phone 404-366-5940 Fax 404-366-5969	ional	2353 3171 2353	Phone 404-361-4840	3842	Employment not available	3171
	Male Emp Ellenwood Female Emp Ellenwood Til Employed Ellenwood Forest Park (Pop. 16,925)	9 2 130	Emp 3M 15F BLANKENSHIP & WALKER PRIN 720 Main St. 30050 Date Est 1969 Market Local Debbie Walker, Owner Commercial Printing Phone 404-366-8063 Emp 0M 0F	18T	2759	FLORIDA ROCK INDUSTRIES, INC. 225 Lee's Mill Rd. 30050 Date Est 1968 Market District Jacksonwille, Florida Florida Rock Industries, Inc. Jacksonwille, Florida Mike Bloebaum, Area Mgr. Donald Weed, Sales Mgr. Bill Haggerry, Supt. Sharon Adcox, Pur Crushed Stone Grante Stone	3281 3281	INTERNATIONAL FOOD SPECIALTIES 946 Main St. 30050 Date Est 1974 Marketi. National M. E. Honerkamp, Gen. Mgr. Della Rivers, Plt. Mgr. Frozen Hot Dog Chili Frozen Chili Con Cames Frozen Brunswick Stew Frozen Tameles Phone 404-366-9310 Emp. 1M. 4F. 5T.	2038 2038 2038 2038
	APAC-GEORGIA INC MACDOUGALD-WARREN DV 195 Lee's Mill Rd P.O. Box 19695, Atlanta 30325 Date Est 1944 Market State Atlanta, Georgia Ashland Oil, Inc Ashland, Kentucky Sam J. Talley, Division Pres T.D. Batzel, V.P. Tom Lightcap, Sales Mgr Asphalic Concrete Phone 404-766-5937 Emp. 5M. OF. 5T	2951	CARGILL INC. 71 Barnett Rd. 30050 Date Est 1976 Market: Internate 1 Minnetonka, Minnesota 1 Cargill, Inc Minnetonka, Minnesota Kevin Brolsma, Gen Mgr. Dan Cox, Sales Mgr. Valerie Newman, Pur Agt. Alkyd Resins Polyester Resins Acrylic Beads/Solutions Phone 404-363-4000 Fax 404-363-4003 Emp. 70M. 16F	oonal 86T	2821 2821 2851	Phone 404-766-8366 Emp 21M 4F 25T FONTAINE TRUCK EQUIP. CO. 5178 Old Dixie Hwy P O Box 278 30051 Market .Regional # Birmingham, Alabama The Marmon Group Chicago, Illinois Jeff Schwermer, Gen Mgr Truck Bodies Trakles	3713 3715	INTERNATIONAL LEADBURNING CO. 5246 Jones Rd. P O Box 967 30051 Date Est 1973 Market. International lan M. Jones. Pres. Ron McDonald. Mgr. Metal Tanks & Fittings Plaste Tanks & Ductwork Lead Linings/X-Ray Protectors Phone 404-363-9065 Fax 404-361-7967 Emp. 4M. OF. 4T.	3443 3089 3821
	ALADDIN ENGINEERING CO. 82 Kennedy Dr. P.O. Box 1708 30051 Market Local Bob McCollum, Pres Metal Fabrication Phone 404-361-6800 Emp 7M 22F 29T	3499	CHAMBLEY PRINTING CO. 5483 Hillside Dr. 30050 Date Est. 1973 Market. Local Eugene Chambley, Pres. Commercial Printing Phone 404-766-9064 Emp. 2M. OF THE CLOROX CO.	2T	2752	FOREST PARK SHEET METAL WORKS P.O. Box 652 30051 Date Est 1951 Market .State M. Moscardelli, Owner Sheet Metal Work	3714 3444	KGA PRINTING 970 Main St. 30050 Date Est 1985 Market. Regional Ken Aderhold, Owner Commercial Offset Printing Typesetting Phone 404-363-2950 Emp 3M 2F 5T MADISON COATINGS (SOUTHEAST), I	
	AMERICAN HOSE & HARDWARE, INC. 4987 Georgia Hwy 85 P.O. Box 1911, Jonesboro 30236 Date Est 1978 Market Local Dean Smith, Gen Mgr. Robert Waller, Sales Mgr. Hydraulic Hose & Fittings Pheumatic Hose/Fittings/Tubing Phone 404-763-1984 Fax 404-763-0224 Emp. 8M. 3F. 111	3492 3052	17 Lake Mirror Rd. P O. Box 16749, Atlanta 30321 Date Est 1971 Market. National Dakland. California The Clorox Co. Oakland. California W C. Castleberry, Plt. Mgr G T. Palmer, Sales Oakland. California C.R. Strickler, Mgr. of Buying Oakland. California Liquid Bleach Dry Bleach		2842 2842	Phone 404-766-6246 Fax 404-766-1214 Emp 11M 2F 13T GENERAL ENGINEERING SERVICE, INC 5020 Dixte Hwy P O. Box 1303 30050 Date Est 1963 Market International H C. Womack & T N Graves, C.E.O.'s H C. Womack, Sales Thomas J Eagle, Pur Agt.		5673 Old Dixie Rd #160 Bldg R 3000 Date Est 1987 Market International ** Madison Chemical Industries Toronto, Ont., Canada Alan Smith, Oprs. Mgr. Polyurethane Coatings Phone 404-361-0646 Fax 404-363-3910 Emp. 9M. 5F. 14T	50 2851
	AMERICAN NATIONAL CAN CO. 48 Royal Dr. 30050 Date Est. 1960 Market. State ‡ Chicago, Illinois • Pechiney SA Pans, France J W. Klingseisen, Mgr. Pat Sullivan, Sales Mgr.		All Purpose Cleaner Liquid Cleanser Phone 404-363-8300 Fax 404-361-6459	223T POGR /	2842 2842	Aircraft Support Equipment Oil & Water Onling Equipment Machine Shop Job Work Missile Transportation Equip. Phone 404-366-0651 Fax 404-366-0657 Emp 30M 5F 35T	3812 3533 3599 3412	MCDANIEL MATTRESS CO. 5755 Old Dixie Hwy 30050 Date Est 1925 Market. District E.M. Weir, C.E.O. Foam Rubber Mattresses Box Springs Phone 404-523-8526 Emp. 11M. 4F. 15T	2515 2515
	Atlanta, Georgia Dave Maki, Pur Agt. Chicago, Illinois Beverage Cans Phone 404-361-2630 Emp 185M 2F 187T	3411	P O Box 1011 30050 Date Est 1967 Market. Local Harold B. Simpson, Pres. Commercial Printing Phone 404-366-4366 Emp 2M 2F	4 T	2759	GRAMACK INDUSTRIES 5020 Old Dixie Hwy 30050 Market . National Clay Wornack, Pres Merrill Templeman, Sales Mark Johnson, Sales Rhonda Watson, Pur Agt Machine Shop-Fabr & Assembly	3599	MERICO, INC. 273 Central Ave P O Drawer D 30050 Date Est 1958 MarketRegional Campbell Taggart Dallas, Taxas Glenn Ward, V.P	
	ATLANTA TARPAULINS 4686 Lake Mirror PI. 30050 Market National Jack Delaigle, Pres Tarpaulins Phone 404-361-2172 Emp OM OF 6T	2394	CROWN PRINTING CO. 4976 Phillips Dr. 30050 Date Est 1965 Market Local J Burran. Pres Offset Job Printing Raised Printing Phone 404-366-9515 Emp. 3M 5F	81	2752 2759	Tooling-Avcraft & Aerospace Ground Support Equip - Artines Oil Field Equipment Phone 404-366-0651 Fax 404-366-0657 Emp OM OF 50T	3544 3537 3533	Terry Farrar, Sales Mgr Richard Evans, Oprs. Mgr Refngerated Biscuits & Rolls Phone 404-361-7211 Fax 404-361-9399 Emp 130M 110F 240T	2051
	BAGCRAFT CORP. OF AMERICA 18 Royal Dr. 30050 Date Est. 1971 Market. International Bagcraft Corp. of America Chicago, Illinois Ronald E. Leonard, C. E. O. Flexible Packaging Material Phone 404-363-6116 Emp. 25M. 4F. 29T	2671	DAN-CO BAKERY, INC. 301 Monty Indus. Blvd 30050 Date Est 1976 Market National Benny Christensen, Pres Ernie Coppola, V P John W. MacEntyre, Pur. Agt. Baked Foods Phone 404-366-1650 Emp 16M 50F	66T	2051	GRAY GRAPHICS, INC. 964-8 Main St. 30050 Date Est 1974 Market National Zebedee Linder, Chrmn /C.E.O. Typesetting Platemaking Commercial Printing Phone 404-366-0821 Fax 404-366-2230 Emp. 4M. 8F. 12T	2791 2796 2759	MURPHY & ORR CO. 564 Main St. 30050 Date Est. 1946 Market. International Gerald A. Murphy, Pres. Exhibit Displays Exitures Portable Displays Commercial Millwork Phone 404-366-2537 Fax 404-366-2585 Emp. 33M. 4F. 37T	2541 3993 2431

REFERENCE 7

SEPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

REGION	SITE NUMBER (to be seeign
	ed by Hq)
TL	od by He)

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Tack Force (EN-335); 401 M St., SW; Washington, DC 20460.

	I. SITE IDE	MITIELCATIC	1 M	
A. SITE NAME			(or other identifier)	
BAG CRAFT CO	ORP.	18	Royal Drug	W
FOREST PARK		GA	30050	Clayton
G. SITE OPERATOR INFORMATION 1. NAME				2. TELEPHONE NUMBER
3. STREET	4. CITY			8. STATE 8. ZIP CODE
AMULE INCORPORTION /	- ton energies of site)			30000
H. REALTY OWNER INFORMATION (i)	different from operator or acce,		!	2. TELEPHONE NUMBER
3. CITY				4. STATE 8. ZIP CODE
1. SITE DESCRIPTION g notust	rial glant who	ich m	figs. vari	ous types if begs
J. TYPE OF OWNERSHIP		·····	. 4	
1. FEDERAL 2. STAT		4. MUNICIP		TE
	II. TENTATIVE DISPOSITIO	ON (complete	e this section last)	
A. ESTIMATE DATE OF TENTATIVE			LEM	
# 20/8 0	1. HIGH *] 2. MEDIUM	3. LOW	4. NONE
C. PREPARER INFORMATION	^			
1. NAME David Brentz		88	HONE NUMBER 8/-30/6	3. DATE (mos, day, & yrs). 4/15/80
	III. INSPECTIO	N INFORMA	TION	/ /
A. PRINCIPAL INSPECTOR INFORMA 1. NAME Puch and Jungo.	•	2. TITLE	em Engl.	
Richard Jewa B. P.A.	Hune	LIW	m vngi.	4. TELEPHONE NO. (4700 code & no.)
B. INSPECTION PARTICIPANTS			·	301 2014
1. NAME	2. ORG/	ANIZATION		3. TELEPHONE NO.
David Brentsel	EPA (Che	m Eng	r Trainee)	881-3016
Richard Ferrancelo	EPA (Cle	em. Erg	n.)	881 - 2234
	AYMO, KMB			
C. SITE REPRESENTATIVES INTERV				
1. NAME	2. TITLE & TELEPHONE NO	0.	3.	ADDRESS
	<u> </u>			
				

D. GENERATOR INFORMAT	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
I, NAME	Z. IECEPA SEE NO.		A. WASTE TYPE GENERATED
		<u> </u>	
E. TRANSPORTER/HAULEF	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTE
			
			
F. IF WASTE IS PROCESSED 1. NAME	2. TELEPHONE NO.	ED TO OTHER SITES, IDENTIFY OFF-SITE F	
	2112211101121107		
			
		A ACCES CAINED BY	
(mo., day, & yr.)	6 9:30 AM	1. ACCESS GAINED BY: (credentials must be	
J. WEATHER (describe)	0 -	1 ,	unds strong from
Partly Cloudy	, cool lem	D. In upper 70 0 "	NW 25 +36 MPL
\cdot \cup		. SAMPLING INFORMATION	
	of samples taken and indic- the results will be availab	ate where they have been sent e.g., region ble.	nal lab, other EPA lab, contractor,
	2. SAMPLE		4. DATE
1. SAMPLE TYPE	TAKEN (mark'X')	S. SAMPLE SENT TO:	RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
C. WASTE			
d. AIR		<u></u>	
. RUNOFF			
•		***************************************	
4 SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER(*panffy)			
B. FIELD MEASUREMENTS	TAKEN (e.g., redicactivity, e	xplosivity, PH, etc.)	
1. TYPE	2. LOCATION	OF MEASUREMENTS	3. RESULTS

Photos- milky while substance

*2 Blue ink contaminant soil- stains

Continued From Page 2							
		IV. 5/	MPLING INFOR	MA	TION (continued)	7	, , , , , , , , , , , , , , , , , , ,
C. PHOTOS			l z. PHOTOS II	N C	USTODY OF:	U	hyl acetati-
				_	5	nI.	must 40 Bassala
D. SITE MAPPED?	AERIAL						hyl acetati- rout 40 Barrels o side of lodg
<u> </u>		4.50					side of lide
YES. SPECIFY LOCAT	ION OF M	IAPS:	O				0
E. COORDINATES			·				
1. LATITUDE (degminsec.,)			2	LONGITUDE (degminsec.)		
			•				
			V. SITE INFO	OR	MATION		
A. SITE STATUS		1					
numicipal sites which are beir	rial or		TIVE (Those no longer receive	1	3. OTHER(specify):	cide	ents like ''midnight dumning''
for waste treatment, storage, o			no longer receive		where no regular or continuing us		
on a continuing basis, even if quently.)	infre-			l	has occurred.)		
		<u> </u>	·	L			
B. IS GENERATOR ON SITE? ☐ 1. NO	S/anneile	deneratoria in	ur-digit SIC Code):				
J	.uquecriy	Severator, a to		_			
C. AREA OF SITE (in acres)		D. ARE THE	ERE BUILDINGS	N	THE SITE?		
		[] 1. NO	L .c				
Onl			/		//		
		VI. CHA	RACTERIZATIO	N	OF SITE ACTIVITY		
ndicate the major site activ	ity(ies) a	and details re	lating to each ac	ctiv	rity by marking 'X' in the appr	opri	ate boxes.
A. TRANSPORTER	'X'	B. 5°	TORER	×.	C. TREATER	×	D. DISPOSER
1.RAIL		1. PILE			1. FILTRATION	1	1. LANDFILL
2. \$HIP		SURFACE IN	POUNDMENT		2. INCINERATION	Ţ.	2. LANDFARM
3. BARGE	A	, DRUMS		Γ	3. VOLUME REDUCTION	T	3. OPEN DUMP
4. TRUCK		TANK, ABO	VE GROUND	Г	4.RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
S. PIPELINE	7	S. TANK, BEL	OW GROUND		S. CHEM./PHYS./TREATMENT	\perp	S. MIDNIGHT DUMPING
6.OTHER(specify):	_	B.OTHER(apec	ity):		6. BIOLOGICAL TREATMENT	↓.	6.INCINERATION
		See.			7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
			•	-	8. SOLVENT RECOVERY		8.OTHER(Specify):
	;	Section		<u> </u>	9.OTHER(specify):		
	ĺ	VII Part ()					
	- 1					1	
	1						
E. SUPPLEMENTAL REPORTS which Supplemental Reports					s listed below, Supplemental Repo	orts	must be completed. Indicate
1. STORAGE	2. IN	CINERATION	3. LANDFIL	LL	4. SURFACE	<u> </u>	DEEP WELL
6. CHEM/BIO/	7. LA	NDFARM	B. OPEN DI	UMF	9. TRANSPORTER] 1	D. RECYCLOR/RECLAIMER
		VI.	WASTE RELAT	ED	INFORMATION		
N. WASTE TYPE							
1. LIQUID	2. so	LID	3. SLUDGE		4. GAS		
. WASTE CHARACTERISTICS		······································					
		W.T.A.B			ue		
1. CORROSIVE		NITABLE	3. RADIOAC	JT1			
5. TOXIC [6. KE	ACTIVE	7. INERT		8. FLAMMABLE		
9. OTHER(apocify):							
. WASTE CATEGORIES 1. Are records of wastes avails	bles So-	cify Itama and	as manifests 1		ones eta beloni		
Intolde of Mester sastie	moter she	- my riems suci	. as mainteats, inv	, ent	.on-s, etc. DEIOW.		

Coatinued From Page 4		<u> </u>	
	VIII. HAZARD DESCRIPTION (continued)		
B. NON-WORKER INJURY/EXPOSURE			
		•	ļ
			İ
C. WORKER INJURY/EXPOSURE			
			J
D. CONTAMINATION OF WATER SUPPLY			
	•	,	
E. CONTAMINATION OF FOOD CHAIN			
F. CONTAMINATION OF GROUND WATER			
F. CONTAMINATION OF GROUND WILLEN			
G. CONTAMINATION OF SURFACE WATER			
	•		
	•		

Continued From Front		1	a tay and a second
	VIII. HAZARD DESCRIPTION (continued)		
H. DAMAGE TO FLORA/FAUNA			
·			
1. FISH KILL			
1. F13H KIEE			
,			
J. CONTAMINATION OF AIR			
	••	/	
			
K. NOTICEABLE ODORS			
			•
L. CONTAMINATION OF SOIL			
f			
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M. PROPERTY DAMAGE			
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Continued Prom Page 6		
	VIII. HAZARD DESCRIPTION (continued)	
N. FIRE OR EXPLOSION		
		·
O. SPILLS/LEAKING CONTAINERS/RUNG	DES/STANDING LIQUID	
J 51 51 14 25 15 15 15 15 15 15 15 15 15 15 15 15 15	PERSONAL ENGLISHE	
P. SEWER, STORM DRAIN PROBLEMS		
	-	
		\
Q. EROSION PROBLEMS -		
R. INADEQUATE SECURITY		
•		
S. INCOMPATIBLE WASTES		
	•	

VIII. HAZARD DESCRIPTION (continued)								
T. MIDNIGHT DUMPING								
					•			
U. OTHER (apacity):		1	. 0	1				
No evidence	e i	if ongo	ing hagan	deres we	iste disposal			
Some white.	milk	1 ligur	of in di	amare d	itch adaient			
to RR tracks		Joe and	plant. D.	tel Plan	wed under			
RR tracks an	d	on other	The state of the s	no luco	lence ap			
wortamination	So	me dans	m throck	but	mo urdence			
of an onl	// / / / / / / / / / / / / / / / / / /	24(20)	advicent	To or	de . 71.00			
nunger to the		Ross T.	C. January.	Tan t				
Ded of	em.	1	Jome 10	i 00	la perce			
anea Plant	in	dicatory.	pass a	pul bru	t official			
was	only	a poli	so pt	in aise	₹,			
	Ŭ	V	0 0	J				
	IX. F	OPULATION DIREC	TLY AFFECTED BY S	ITE				
A. LOCATION OF POPULATION		APPROX. NO.	C. APPROX. NO. OF PEC AFFECTED WITHIN	OPLE D. APPROX. OF BUILDIN				
ALEGERION OF POPULATION		OPLE AFFECTED	UNIT AREA	AFFECTE				
1. IN RESIDENTIAL AREAS								
2. IN COMMERCIAL 2. OR INDUSTRIAL AREAS								
IN PUBLICLY 3. TRAVELLED AREAS								
4. (parke, echoole, etc.)								
A. DEPTH TO GROUNDWATER(speci	fy unit)	X. WATER AND	HYDROLOGICAL DA	C. GROUNDWATER L	JSE IN VICINITY			
D. POTENTIAL YIELD OF AQUIFER		(specify unit of mea	NKING WATER SUPPLY	F. DIRECTION TO D	RINKING WATER SUPPLY			
G. TYPE OF DRINKING WATER SUP								
1. NON-COMMUNITY CIS CONNECTIONS	2. COMMU > 15 CO	NITY (specify town): NNECTIONS —						
3. SURFACE WATER	4. WELL							

X. WATER AND HYDROLOGICAL DATA (continued) H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE COMMUN-MON-COM-MUNITY (mark 'X') 3. LOCATION (proximity to population/buildings) (mark 'X') I. WELL 2. DEPTH (apecily unit) I. RECEIVING WATER 1. NAME 2. SEWERS 3. STREAMS/RIVERS ___ 4. LAKES/RESERVOIRS 6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS XI. SOIL AND VEGITATION DATA LOCATION OF SITE IS IN: A. KNOWN FAULT ZONE B. KARST ZONE C. 100 YEAR FLOOD PLAIN D. WETLAND F. CRITICAL HABITAT G. RECHARGE ZONE ON SULLE SOURCE AQUIFER E. A REGULATED FLOODWAY XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts. C. . THER (epa: Hy below) A. CVERBURDEN B. BEDROCK (epecify below) 1. SAND 2. CLAY 3. GRAVEL XIII. SOIL PERMEABILITY ___ C. HiGH (1000 to 10 cm/sec.) A. UNKNOWN B. VERY HIGH (100,000 to 1000 cm/sec.) D. MODERATE (10 to .1 cm/sec.) E. LOW (.1 to .001 cm/sec.) F. VERY LOW (.001 to .00001 cm/sec.) G. RECHARGE AREA 🔲 1. YES ___ 2. NO 3. COMMENTS: H. DISCHARGE AREA 1. YES ___ 2. NO 3. COMMENTS: I. SLOPE 1. ESTIMATE % OF SLOPE 2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC. J. OTHER GEOLOGICAL DATA

Continued From Page 8

·		XIV. PERMIT IN					
st all applicable permits he	ld by the site and	provide the related i	nformation.				
A. PERMIT TYPE	B. LOCKINA	C. PERMIT	D. DATE ISSUED	E. EXPIRATION DATE	F. IN	F. IN COMPLIA (mark 'X')	ANCE
g.,RCRA, State,NPDES, etc.)	B. ISSUING AGENCY	NUMBER	(mo.,dey,&yt.)	(mo.,day,&yr.)	1. YES	2. NO	S. UN-
· · · · · · · · · · · · · · · · · · ·		·					1
		 			ļ <u></u>		+
			•				
· · · · · · · · · · · · · · · · · · ·						-	
	XV. PAST	REGULATORY OR I	NFORCEMENT AC	TIONS			
		•		į			
	- -						

EPA Form T2070-3 (10-79)

on the first page of this form.

PAGE 10 OF 10

NOTE: Lased on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION IV

HAZARDOUS MATERIAL ENFORCEMENT AND RESPONSE PROGRAM

- SITE NAME Bog Craft Corp- of America
SITE ADDRESS 16 Royal Dr. Forest Park
ORR Ord Perise Hay: claston Co.
HOW/DATE IDENTIFIED 3/20/80 Gene Drake 961-773.7
SITE DESCRIPTION Alcohols and acetates stored in
tank leaking into gound which is cature
inks also disposed of west motival i
WASTE RELATED INFORMATION Area in lack on Peft ha
unoff from pigoty down to RR tracks
HAZARD IDENTIFICATION
NAME OF CALLER SEL OUTTUR
ADDRESS OF CALLER
TELEPHONE NUMBER
HAS THIS BEEN REPORTED TO ANY STATE OR LOCAL AUTHORITY? How, When?
No only I-P+1
<u> </u>
FOLLOW-UP: Well wat about 3 weeks, Then
notify GAFPD to make site inspection
Called GAEPD PM April 9

O CDA				SiT	E NUMBER	
SEPA POTENTI	AL HAZARD	OUS WASTE :	SITE LOG	<u>ن</u>	400000	03000
NOTE: The initial identification of a potential ation that an actual health or environme. Waste Site Enforcement and Response S	ental threat ex	rists. All ident	ified sites will be a	ssessed under	the EPA's	
Bag Croft	t Co	W-				
Fount & Park		STATI	6A	ZIP	CODE	
Dumping of inks, a renoff from property	leohols. City	and con	plaint	on to	groun	d Some
ITEM	DATE OF DETERMIN- ATION OR COMPLE- TION	OR IN	E ORGANIZATION DIVIDUAL Contractor, Other)	PERSON M. ENTR TO LOG F	Y	DATE ENTERED ON LOG (mo,day,yr)
1. IDENTIFICATION OF POTENTIAL PROBLEM	3/26/80	EPA, F	massewb	Ferraz:	jul.	3/26/80
2. PRELIMINARY ASSESSMENT	4/15/80	EPA, A	Enazzust	Fenan	eub	#/15/80
APPARENT SERIOUSNESS OF PROBLEM.	HIGH	MEDIUM	LOW NON	IE UNKN	OWN	! !
3. SITE INSPECTION	4/15/80	EPA, A	enazzacto	Fenasz	wob	4/13/80
4. EPA TENTATIVE DISPOSITION (check appropriate item(s) below)						
a. NO ACTION NEEDED						
b. INVESTIGATIVE ACTION NEEDED						
c. REMEDIAL ACTION NEEDED						
d. ENFORCEMENT ACTION NEEDED					***	
5. CHA FINAL STRATEGY DETERMINATION (check appropriate item(e) below)						
a. NO ACTION NEEDED						
b. REMEDIAL ACTION NEEDED						
C. REMEDIAL ACTION NEEDED BUT,						

EPA Form T2070-1 (10-79)

6. STRATEGY COMPLETED

___ d. ENFORCEMENT ACTION NEEDED

(1) CASE DEVELOPMENT PLAN PREPARED

(2) ENFORCEMENT CASE FILED OR ADMINISTRATIVE ORDER ISSUED

REFERENCE 9

GERA	L

POTE. AL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT.

EGION	SITE NUMBER (10 be	-
$\widehat{\Pi}$	eigned by Hq)	

	1		
NOTE: This form is completed for each potential hazardous waste site to help set p			
submitted on this form is based on available records and may be updated on subsequ	ient forms as a	result of ad	ditional inquiries
and on-mite inspections.			•

GENERAL INSTRUCTIONS: Comple Assessment), File this form in the F Agency; Site Tracking System; Haze	Regional Hazardous Waste L	og File and submit a	copy to: U.S. Envir	onmental Protection
	I. SITE IDE	NTIFICATION		······································
A. SITE NAME		B. STREET:(or other	identifier)	
BOC Mall	yp.	DISTATE TE.Z	P CODE F. COU	NTY NAME
Forest Park	0	GA Y	ČŽ	ala
G. OWNER/OPERATOR (II known) 1. NAME			2. TELE	PHONE NUMBER
H. TYPE OF OWNERSHIP				
1. FEDERAL 2. STATE	3. COUNTY4 MUNIC	- 1		
ground; ink disposal	and metales.	stored in a	Sank leak	ing ente salesation
J. HOW IDENTIFIED (I.e., citizen's comp	laints, OSHA citations, etc.)			K. DATE IDENTIFIED
titizen	complaint	•		(mo., day, &, yr.)
L. PRINCIPAL STATE CONTACT				1 1/5/25/- 0 2
1- NAME		•	2. TELE	PHONE NUMBER
	PRELIMINARY ASSESSME	NT (complete this se	ection last)	
A. APPARENT SERIOUSNESS OF PROBL	-			
☐1. HIGH Z2. MEDIUM	3. LOW4 NONE	S UNKNO) W1: •	
B. RECOMMENDATION				
1. NO ACTION NEEDED (no hazard)			SITE INSPECTION NEI ELY SCHEDULED FOR	
3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED F	OR:	b. WILL BE P	ERFORMED BY:	·
R. Ferrassu	So	4. SITE INSPE	CTION NEEDED (low pr	riority)
C. PREPARER INFORMATION	ol			
1. NAME R. Ferragge	wo		E NUMBER 7 - 2234	3. DA FE (mo., day, & yr.)
	III. SITE IN	FORMATION		
A. SITE STATUS 1. ACTIVE (Those industrial or mulcipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intro-quently.)	2. INACTIVE (Those sites which no longer receive wastes)	3. OTHER (spec (Those sites that inc no regular or continui	lude such incidente like	o "midnight dumping" where aste disposal has occurred.)
B. IS GENERATOR ON SITE?	1.			
☐ 1. NO	2. YES (epecify gener	rator's four-digit STC C	Code):	
C. AREA OF SITE (in ocres)	D. IF APPARENT SERIOUSNI 1. LATITUDE (degmineec		SPECIFY COORDINAT 2. LONGITUDE (deg-	
E. ARE THERE BUILDINGS ON THE SITE			<u> </u>	
1. NO Z 2. YES (apacily)); 			

V. WASTE RELATED INFORMATION A. WASTE TYPE []1 UNKNOWN						V. 1	CHARACTERIZATI	אט	OF SITE ACTIVIT	Y					·
BALL PILE	Inc	licate the major sit	e activity(105) and det	arl	relating to each a	ctiv	ity by marking 'X' t	n ti	חיקר "י	ropi	iate boxe	s.	
S. SILE S. SULF ACE SEPONDOMENT S. INCHESTION S. LANDER SET ON	× /	A. TRANSPOR	TER	X			TOPER	×	C. TREATE	R		· x ·	(D. [DISPOSER
S. BARGE S. EMUS S. VOLUME REDUCTION S. OPEN CHAMBER S. THREE S. TANK, ABOVE GROUND S. RECYCLING/RECOVER S. SURFACE IMPOUNDMENT		1. RAIL		\Box	1. PILE				. FILTRATION				I. LANDFI	LL	
4. TANK, ABOVE GROUND 4. RECYCLING/RECOVERY 5. PIPELINE 5. TANK, BELOW GROUND 6. OTHER (specify) 6. OTHER (specify) 6. OTHER (specify) 7. WASTE CIU. REPROCESSING 8. OTHER (specify) 8. OTHER (specify) 1. OTHER (specify) 8. OTHER (specify) 1. OTHER (specify) 8. OTHER (specify) 1. OTHER (specif		2. \$HIP			2. SUNF	A C E	IMPOUNDMENT	7;	. INCINERATION				2. LANDE	RN	1
S. PIPELINE S. TANK, BELOW GROUND S. CHEM/PHYS THE STRUCT S. MIDJOIST DUMBING S. CHEM/PHYS THE STRUCT S. MIDJOIST DUMBING S. SOLVEST RECOVERY S. SOLVEST RECOVERY S. OTHER (SPECIFY) S. MASTE CATEGORIES S. MASTE CATEGORIES S. AN ENCORED WHITE SAMILABLE S. SOLVENTS S. OTHER (SPECIFY) S. OTHER (3. BARGE		IX	3. DRUM	s		7	. VOLUME REDUCT	0 N			OPEN D	UM	e
S. PIPELINE S. TANK, BELDW GROUND S. CHEMPHY, TREATMENT S. BOLDGOEAL TREATMENT S. SOLVENT RECOVERY S. SOLVENT RECOVERY S. OTHER (SPECIFY) F		4. TRUCK		∇	4. TANK	, A E	OVE GROUND	7	. RECYCLING/RECO	VE	RY		4. SURFAC	E I	MPOUNDMENT
B. OTHER (specify): S. OTHER (specify):		5. PIPELINE		f÷	S. TANK	. BE	LOW GROUND	٠	S. CHEM./PHYS. TRE	AT	ME'ELT				
E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED TOTAL CONTROL OF SITE ACTIVITIES AS NEEDED TOTAL CONTROL OF SITE ACTIVITIES AS NEEDED TOTAL CONTROL OF SITE ACTIVITIES AS NEEDED TOTAL CONTROL OF SITE ACTIVITIES AS NEEDED TOTAL CONTROL OF SITE ACTIVITIES AS NEEDED V. WASTE RELATED INFORMATION A. WASTE TYPE UNKNOWN 2 LIQUID 3. SOLID 4. SLUDGE 5. GAS B. WASTE CHARACTERISTICS UNKNOWN 2 CORROSIVE 3. IONITABLE 4 RADIOACTIVE 5 HIGHLY VOLATILE O OTHER (specify) 7 REACTIVE 8 INERT 9 FLAMMABLE 10. OTHER (specify) 7 REACTIVE 8 INERT 9 FLAMMABLE 10. OTHER (specify) 10. OTHER (specify) items such as manifests, inventories, etc. below. 2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indirate which wastes are present. AMOUNT AM	-			1	}							-			
E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED TOTAGE ALLA IN BACK ON LEAT HONOR SIDE ACTIVITIES AS NEEDED TOTAGE ALLA IN BACK ON LEAT HONOR SIDE ACTIVITIES AS NEEDED A. WASTE TYPE V. WASTE RELATED INFORMATION A. WASTE CHARACTERISTICS II. UNKNOWN Z LIQUID 3. SOLID 4. SLUDGE S. GAS B. WASTE CHARACTERISTICS III. UNKNOWN Z LORGOSIVE 3. IGNITABLE 4. RADIDACTIVE 5. HIGHLY VOLATILE 6. TOXIC 7. REACTIVE 8. INFRIT 19. FLAMMABLE 10. OTHER (appecilly) C. WASTE CATEGORIES 1. Are records of wastes available? Specify items such as manifests, inventories, etc. below. 2. RESIDANCE SPOCIAL SP			•	-	, • • • • • • •	. , ,	}					-			
E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED TORGE and in back on left hand adde; mendly down to know he had to know he had adde; mendly down to know he had to know he had adde; mendly down to know he had to know he had adde; mendly down to know he had to know he had adde; mendly down to know he had to know he had adde; mendly down to know he had to know he had adde; mendly to know he had adde; mendly to know he had adde; mendly to know the had added to know he h				{			ŀ	-+				-			
Thorage and in back on left hand aide; numbly from paying down to RR tacks V. WASTE RELATED INFORMATION A. WASTE TYPE [1] UNKNOWN [2] LIQUID [3], SOLID [4], SLUDGE [5], GAS B. WASTE CHARACTERISTICS [3] LINKNOWN [2] CORROSIVE [3], IGNITABLE [4] RADIOACTIVE [5] S HIGHLY VOLATILE [6] TONIC [7] REACTIVE [8] INERT [5] FLAMMABLE [10] O. OTHER (apecify): C. WASTE CATEGORIES 1]. Are records of wastes available? Specify items such as manifests, inventories, etc. below. 2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indirate which wastes are present. **S. SLUDGE b. Oil c. SOLVENTS d. CHEMICALS e. SOLIDS f. OTHER AMOUNT AMOUNT AMOUNT AMOUNT AMOUNT AMOUNT UNIT OF MEASURE UNIT OF MEASURE UNIT OF MEASURE UNIT OF MEASURE UNIT OF MEASURE UNIT OF MEASURE UNIT OF MEASURE 12) METALS 12) OTHER (specify) 12) NON-MALOGENTD 12) PICKLING 12] ASSESTOS 12] HADDER 13] POTW 1(1) ALDUMINUM 14] POTW 1(2) ALDUMINUM 14] POTW 1(3) ALDUMINUM 15] OTHER (specify) 13] INON-MALOGENTD 13] IN										- 17 - 1			. OTHER	(sp	ecrry):
V. WASTE RELATED INFORMATION A. WASTE TYPE []1 UNKNOWN 2 LIQUID 3. SOLID 4. SLUDGE 5. GAS B. WASTE CHARACTERISTICS []2 UNKNOWN 2. CORROSIVE 3. IGNITABLE 4. RADIOACTIVE 5. HIGHLY VOLATILE []3 TOXIC 7. REACTIVE 6. INERT 9. FLAMMABLE []10. OTHER (apecily): []10. OTHER (apecily): []10. OTHER (apecily): []11. Are records of wastes available? Specify items such as manifests, inventories, stc. below. []11. Are records of wastes available? Specify items such as manifests, inventories, stc. below. []11. Are records of wastes available? Specify items such as manifests, inventories, stc. below. []11. Are records of wastes available? Specify items such as manifests, inventories, stc. below. []12. Estimate the amount(specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present. []2. Estimate the amount(specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present. []3. AMOUNT	E.	SPECIFY DETAILS	OF SITE AC	 : TI	VITIES A	S N	EEDED ,								
A. WASTE TYPE 1 UNKNOWN 2 LIQUID 3. SOLID 4. SLUDGE 5. GAS	Store														
B. WASTE CHARACTERISTICS 1. UNKNOWN 2. CORROSIVE 3. IGNITABLE 4 RADIOACTIVE 5 HIGHLY VOLATILE 6 TOXIC 7 REACTIVE 8 INERT 9 FLAMMABLE 10. OTHER (specify): C. WASTE CATEGORIES 1. Are records of wastes available? Specify items such as manifeste, inventories, etc. below. 2. Estimate the emount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present. a. SLUDGE b. OIL c. SOLVENTS d. CHEMICALS e. SOLIDS f. OTHER AMOUNT AMOU	A.	WASTE TYPE					V. WASTE RELAT	ED	INFORMATION						
1. UNKNOWN 2. CORROSIVE 3. IGNITABLE 4 RADIOACTIVE 5 HIGHLY VOLATILE 6. TOXIC 7 REACTIVE 8 INERT 9 FLAMMABLE	С] і пикиоми 🐧	<u> </u>		3	. sc	DLID4. s	LU	DGE5. G	AS					
2. Estimate the emount(specify unit of measure) of waste by category; mark 'X' to indirate which wastes are present. a. SLUDGE b. OIL c. SOLVENTS d. CHEMICALS e. SOLIDS I. OTHER AMOUNT AMOUN	X	TI. UNKNOWN	2. CORRO						•	IGН	LY VO	LA'	TILE .		
2. Estimate the emount(specify unit of measure) of waste by category; mark 'X' to indirate which wastes are present. a. SLUDGE b. OIL c. SOLVENTS d. CHEMICALS e. SOLIDS I. OTHER AMOUNT AMOUN		710 OTHER (************************************	nr.).												
1. Are records of wastes available? Specify items such as manifests, inventories, etc. below. 2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present. 2. SUUDGE 3. SUUDGE 4. OIL 5. SOLVENTS 6. CHEMICALS 6. SOLIDS 7. OTHER AMOUNT AM	_=														
UNIT OF MEASURE UNIT O		. SLUDGE	ъ. (asu		gor		ate				res	
X. (1) PAINT. PIGMENTS X. (1) OILY WASTES (1) ACIDS X. (1) ACIDS X. (1) PAINT. PIGMENTS (2) METALS (2) METALS (3) POTW (3) OTHER(specify): (4) ALUMINUM SLUDGE (4) PESTICIDES (5) OTHER(specify): (6) OTHER(specify): (7) PHENOLS (8) PCB (10) METALS	AMO	TAUC	AMOUNT	AMOUNT AMOUNT			A ~	OUNT			^~	TAUOI			
(2) METALS	UN	IT OF MEASURE	UNIT OF ME		JNIT OF MEASURE		IT OF MEASURE	UN	IIT OF MEASURE	UN	IIT OF	ME	ASURE	υN	IIT OF MEASURE
SOLVENTS LIQUORS (3) POTW (3) OTHER(specify): (4) ALUMINUM SLUDGE (5) OTHER(specify): (5) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (7) PHENOLS (8) HALOGENS (9) PC B (10) METALS	×·					'×·	(TIHALOGENATED SOLVENTS	· ×	(1) A CIDS	· x '	(I)FL	/ A 5	н	·x·	(1) LABORATORY PHARMACEUT.
(4) ALUMINUM SLUDGE (4) PESTICIDES (4) FERROUS SMLTG. WASTES (4) MUNICIPAL (5) DYES/INKS (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify): (6) OTHER(specify):	ا		(2) OTH	ER	(specify):			1_			(2) AS1	BES	TOS		(2) HOSPITAL
(4) PESTICIDES (4) SMLTG. WASTES (4) MUNICIPAL (5) OTHER(specify): (5) OTHER(specify): (6) OTHER(specify): (7) PHENOLS (8) HALOGENS (9) PCB		(S) POTW	-				(3) OTHER(specify):		(3) CAUSTICS						(3) RADIQACTIVE
(6) CYANIDE (7) PHENOLS (8) HALOGENS (9) PCB					İ				(4) PESTICIDES		(4) FEI SML	RRO TG	US . WASTES		(4) MUNICIPAL
IST CYANIDE (7) PHENOLS IST HALOGENS (9) PCB ITO) METALS	_1	5) OTHER(specify):					,	X	(5) DYES/INKS						(5) OTHER (specify):
(9) PC B	•				ļ				(6) CYANIDE	لـا	(B) OT	1ER	(specity):		
(9) PCB								_	(7) PHENOLS						
110) METALS									(8) HALOGENS						
		•						_	(9) PCB						
alcoholo acatato								L	(10) METALS						• .
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							• .	a	limother (opecity)	to	ite)	ļ		

3. L'ST SUBSTANCES OF GREATES"	TCONCL	WHICH MAY E		lace in descendir	ler of hezerd).					
inks actone alcohols			5.76 ()		•					
										
4. ADDITIONAL COMMENTS OR NAR	RATIVE DES	SCRIPTION OF	F SITUATION KNOW		TO EXIST AT THE SITE.					
VI. HAZARD DESCRIPTION										
A. TYPE OF HAZARD	B. POTEN- TIAL HAZARD (mark 'X')	C. Fileged INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo.,day,yr.)	-	E. REMARKS					
1. NO HAZARD		 	· •							
2. HUMAN HEALTH					•					
NON-WORKER INJURY/EXPOSURE			_		•	<u></u>				
4. WORKER INJURY										
B. CONTAMINATION OF WATER SUPPLY										
6. CONTAMINATION OF FOOD CHAIN										
7. CONTAMINATION OF GROUND WATER										
CONTAMINATION OF SURFACE WATER			- -	•						
DAMAGE TO FLORA/FAUNA										
IO. FISH KILL				,						
II. CONTAMINATION OF AIR										
12. NOTICEABLE ODORS										
13. CONTAMINATION OF SOIL		X								
I4. PROPERTY DAMAGE					·					
18. FIRE OR EXPLOSION										
8. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS		X	•							
7. SEWER, STORM DRAIN PROBLEMS										
. EROSION PROBLEMS										
. INADEQUATE SECURITY										
O. INCOMPATIBLE WASTES		·								
1. MIDNIGHT DUMPING		·								
2. OTHER (specify):										
PA Fam T2070-2 (10-79)			PAGE 3 OF A		Continue On Re					

STE RELATED INFORMATION (continued)
WHICH MAY BE ON THE SITE (place in descending)

REFERENCE 10

	POTENTIAL	HAZARDOUS-WAS	TE SITE		RE .	GION SIT	E NUMBER	
METH	FINAL STRA	TEGY DETERM		<u>Y</u>				
File this form in the regions System; Hazardous Waste E	al Hazardous Waste Log Inforcement Task Force	File and submit (EN-335); 401 M	a copy to: U St., SW; Wa	J.S. Environi shington, DC	mental Pro C 20460.	otection A	Agency; Site	Tracking
		I. SITE IDENTI						
A. SITE NAME Bag Co.	At Com	•	B. STREET	Ros	al	Ds		
c. city Fores	Pak		D. STATE	6f) (ξ.	ZIP CODE	
Indicate the recommended ac		II. FINAL DETE		-1:- (7):	. 41			
marcate the recommended at	RECOMMENDATION) that should be in	ivolved by in	MARK'X'	EPA		AGENCY	PRIVATE
A. NO ACTION NEEDED				X				
B. REMEDIAL ACTION NEEDS (If yes, complete Section III.	ED, BUT NO RESOURCE	S AVAILABLE		·				
C. REMEDIAL ACTION (If yes,	, complete Section IV.)		<u></u>					
D. ENFORCEMENT ACTION (I managed by the EPA or the			l be primarily anticipated.)					
e. RATIONALE FOR FINALS The hazard Publicance in Ploud had To blds and To blds and The CASE DEVELOPMENT THE DATE PREPARED (Ma	lous wasting the health of the some solver of the cuture of the health o	id not ent and	Camo	nes of	kalin mo	le, Mi	lely who	ting the dunc coliaci Cont
1. NAME R. F2	mazwoli	>	F/S	257	- 223	J. 3.	4-116/8	y, & yr.)
III. R	EMEDIAL ACTIONS T	O BE TAKEN WH	EN RESOUR	CES BECO	ME AVAIL	ABLE		
List all remedial actions, su for a list of Key Words for ex remedy.								
A. REMEDIAL AC	CTION	B. ESTIMATE	D COST		c.	REMARK	S	
		\$				•	•	
	:	\$						
		\$						
		\$ '						
·		\$						
		\$				J-2-2-1-1-1		
		\$					•	
		\$						
D. TOTAL ESTIMATED COST	\$							j

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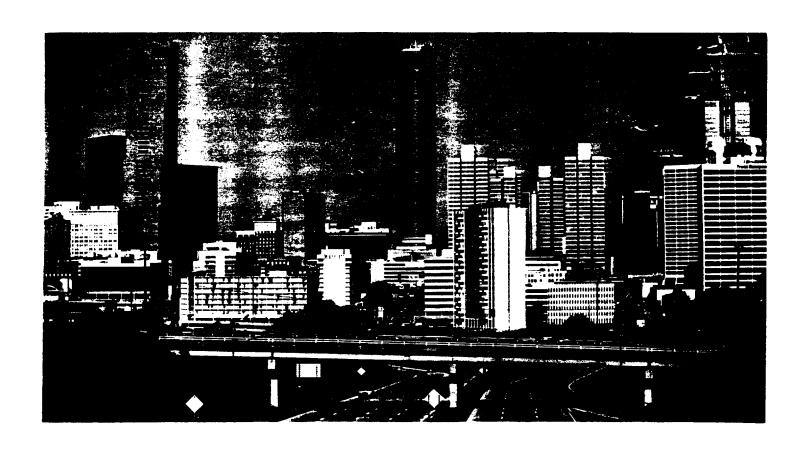
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REFERENCE 11

GEOLOGY OF THE GREATER ATLANTA REGION

Keith I. McConnell and Charlotte E. Abrams



Department of Natural Resources J. Leonard Ledbetter, Commissioner Environmental Protection Division Harold F. Reheis, Assistant Director

Georgia Geologic Survey William H. McLemore, State Geologist

> Atlanta 1984

BULLETIN 96

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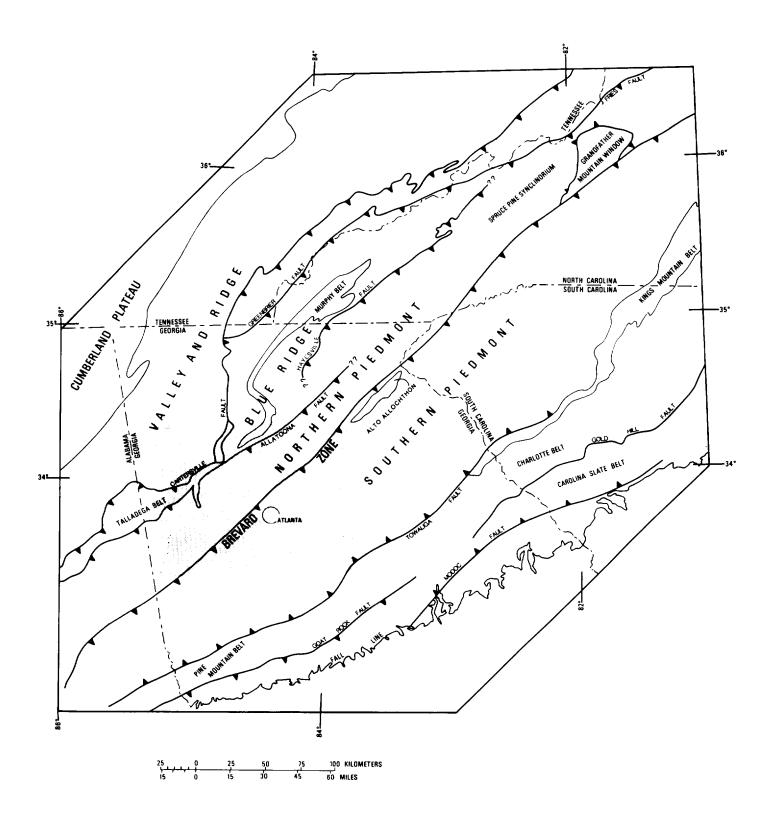


Figure 2. Regional location map showing boundaries of the Greater Atlanta Regional Map and regional setting of map area (modified after McConnell and Costello, 1982).

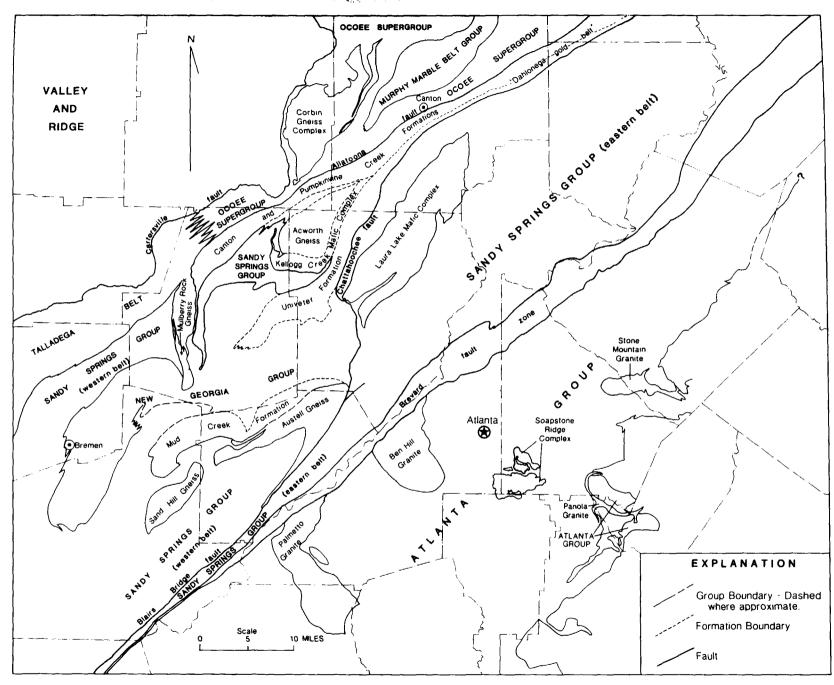


Figure 11. Group and formation boundaries of the crystalline rocks of the Greater Atlanta Regional Map.

Stratigraphic control is another aspect to the Brevard fault zone. Hatcher (1975, 1978a) indicated that the Brevard fault zone was stratigraphically controlled for at least part of its length and is bordered by several equivalent rock units (i.e., Heard group, Sandy Springs Group, Tallulah Falls Formation, Ashe Formation) for most of its length. In the Greater Atlanta Regional Map area, the stratigraphic distinction is not as clear as it is to the northeast. Although the Sandy Springs Group is present along the northwestern boundary of the Brevard zone in the Greater Atlanta Region, the absence of units defined as Chauga River Formation (Hatcher, 1969) south of Flowery Branch complicates the issue of stratigraphic control of the Brevard zone. In this area, rocks of the Sandy Springs Group occur on both sides of the Brevard fault zone (Kline, 1980, 1981). However, the Wolf Creek Formation (Higgins and Atkins, 1981), a unit composed of thinly laminated amphibolite interlayered with "button" schist, is lithologically and texturally similar to and in the same relative tectonic position as the Poor Mountain Formation in northeastern Georgia where the Poor Mountain Formation borders on the Alto Allochthon (Hatcher, 1978b). The Wolf Creek Formation may represent the lithostratigraphic equivalent of a portion of the Poor Mountain Formation and the stratigraphic association of the Brevard fault zone readily apparent to the northeast would be present at least as far southwest as Atlanta. A speculative extension of this correlation would be that the rocks exposed in the Newnan-Tucker synform may represent another allochthon resting on Poor Mountain Formation equivalents.

SOUTHERN PIEDMONT

In the recent past, the so-called "belt" terminology or geographic separation of rocks (i.e., northern and southern) was criticized for its ambiguity and in some cases its inapplicability (Crawford and Medlin, 1970; Medlin and Crawford, 1973; McConnell, 1980b). However, no suitable replacement was proposed to enable geographic placement of various rock sequences within the regional geologic framework. In the Atlanta area, rock sequences north of the Brevard fault zone were redefined by one set of workers (McConnell and Costello, 1980b; Abrams and McConnell, 1981a; McConnell and Abrams, 1982a, 1982b; this report), while south of the Brevard, another set of workers has redefined stratigraphic relationships (Atkins and Higgins, 1980; Higgins and Atkins, 1981). Although similar rocks and stratigraphic sequences exist on both sides of the Brevard zone, little effort has gone into relating the two areas. Thus, the geologic distinction between rocks on either side of the Brevard zone is more apparent than real.

Atlanta Group

Studies of stratigraphic relationships within that portion of the Greater Atlanta Regional Map southeast of the Brevard zone generally are limited to two reports (Atkins and Higgins, 1980; Higgins and Atkins, 1981). These reports define a stratigraphic succession of rocks (Atlanta Group, Fig. 11) that occurs in either a synformal anticline or a synformal syncline (Higgins and Atkins, 1981). Higgins and Atkins (1981) interpret this structure as a syncline, but indicate that the stratigraphic sequence they propose is inverted if the alternative hypothesis is correct. Many rock units defined by Higgins

and Atkins (1981) are lithologically similar to units defined northwest of the Brevard fault zone (Appendix A gives a brief description of all rock units in the Greater Atlanta Regional Map south of the Brevard fault zone). In the Atlanta area, Kline (1980, 1981) and McConnell (1980b) indicated that rocks of the Sandy Springs Group are present on both sides of the Brevard fault zone. This is consistent with observations farther northeast (Hatcher, 1978b), as well as those related to this report (Plate Ia). The recognition that similar rock sequences exist on both sides of the Brevard zone opens the way for a reinterpretation of stratigraphic relationships within Higgins and Atkins' (1981) Atlanta Group using age and structural relationships established north of the Brevard zone. Rocks northwest of the Brevard zone can serve as a guide for stratigraphic interpretation because of the nonconformable relationship between Grenville basement and Sandy Springs Group equivalent Tallulah Falls Formation in northeastern Georgia (Hatcher, 1974, 1977). Therefore, some indication of stratigraphic "up" is available northwest of the Brevard zone. Comparing mineralogical characteristics of some units in the Atlanta Group with those defined in the northern Piedmont also allows for the reinterpretation of the origin of several rock units defined by Higgins and Atkins (1981), in particular, the Intrenchment Creek Quartzite. The Intrenchment Creek Quartzite is defined as a spessartine-bearing quartzite (coticule rock) and mica schist unit that is composed locally of 15 to 30 percent spessartine garnet and 70 to 85 percent quartz (Higgins and Atkins, 1981). The chemical composition of this rock is attributed to be the result of "halmyrolytic alteration" of oceanic sediments associated with mafic volcanic rocks by Higgins and Atkins (1981, pg. 20). However, spessartinebearing quartzites are common in the predominantly volcanogenic New Georgia Group northwest of the Brevard zone and in volcanogenic sequences elsewhere (John Slack, personal commun., 1982). In the New Georgia Group spessartine quartzites are associated with banded iron formation. In addition, manganiferous quartzites are a facies of banded iron formation in the Draketown area and contain up to 53 percent manganese (Abrams and McConnell, unpublished data). We suggest that a more likely origin for the Intrenchment Creek Quartzite is derivation from exhalative processes and deposition as a siliceous chemical sediment within a volcanic terrain. The aluminous nature of the quartzite may suggest inclusion of a clay fraction (Abrams and McConnell, 1982b). The presence of garnet facies iron formation in association with mafic and felsic volcanics (i.e., Camp Creek and Big Cotton Indian Creek Formations; Higgins and Atkins, 1981) southeast of the Brevard fault zone is similar to relationships observed in the New Georgia Group northwest of the Brevard zone. The fact that similar stratigraphic sequences are present on both sides of the Brevard zone (Hatcher, 1972, 1978b; Crawford and Medlin, 1973; Kline, 1980, 1981; McConnell, 1980b) and that lithologic similarities exist between the New Georgia Group and the Intrenchment Creek Quartzite, Camp Creek Formation, Big Cotton Indian Creek sequence suggest that they formed in similar environments, possibly contemporaneously. If the above-mentioned stratigraphic sequences are coeval, a basis for reinterpreting the character of the Newnan-Tucker synform (Higgins and Atkins, 1981) exists. In this report, the Camp Creek Formation, Big Cotton Indian Creek Formation and Intrenchment Creek Quartzite



are interpreted as the oldest units in the Atlanta Group (analogous to the New Georgia Group northwest of the Brevard fault zone) and the Newnan-Tucker synform. therefore, is a synformal anticline with stratigraphically younger units occurring on limbs of the structure (Plate I). Sandy Springs Group rocks and their probable equivalents ¹ in the Atlanta Group (Table 11. Plate Ib) are present on the limbs of the synform and stratigraphically overlie New Georgia Group equivalents (Plate I).

We also suggest that the relationship of Snellville Formation rocks to the Lithonia Gneiss is more likely a fault than an unconformity as previously suggested by Atkins and Higgins (1980). Atkins and Higgins (1980) interpreted this contact as an unconformity, but also gave evidence for characterizing this contact as a fault. This bulletin favors the latter interpretation of this contact primarily because of evidence cited by Atkins and Higgins (1980). Also, the "unconformity" interpretation requires a second Paleozoic metamorphic event for which, in the Greater Atlanta Region, there is a lack of strong evidence. However, due to a lack of detailed mapping in the area by the authors of this bulletin, the contact is expressed as a stratigraphic contact on Plate I.

Outside of the area mapped by Higgins and Atkins (1981) little to no data are available for compilation. Information that does exist is in the form of open-file maps. Other areas (i.e., the easternmost part of the Greater Atlanta Regional Map) where no detailed data are available for compilation are left blank

(Plate I). Open-file mapping of Crawford and Medlin (Georgia Geologic Survey, 1976) was used in the southwesternmost portion of the Greater Atlanta Regional Map.

Regional Correlations

The similarity between rock units and stratigraphic sequences across the Brevard fault zone was previously discussed in this and previous reports (Crawford and Medlin, 1973; Hatcher, 1972, 1978b). In general, correlatives of the Sandy Springs and New Georgia Groups are believed to occur southeast of the Brevard fault zone in rocks defined as Atlanta Group. We speculate that, although complicated by intrusion of late Paleozoic plutons and the presence of large migmatitic terranes such as the Lithonia Gneiss, rocks defined as Atlanta Group by Higgins and Atkins (1981) probably were deposited in similar environments and had similar provenance to the New Georgia and Sandy Springs Group rocks. Therefore, correlations made in a previous section for rocks of the New Georgia and Sandy Springs Groups (i.e., equivalent to Ashe Formation) may be applicable for rocks of the Atlanta Group.

PLUTONIC ROCKS

Post Grenville-age intrusive rocks generally are limited to the Piedmont portion of the Greater Atlanta Region, although numerous pegmatites occur in the Blue Ridge (Galpin, 1915). In the Greater Atlanta Regional Map area, plutons of known Grenville and possibly older age are restricted to the Corbin Gneiss Complex east of a Cartersville in the Blue Ridge province (Fig. 4) where a 1,000-m.y.-old, coarse, megacrystic facies crosscuts a metasedimentary precursor (Costello, 1978; McConnell and Costello, 1984).

Table 11. Proposed correlation chart of northern and southern Piedmont lithologic units.

Atlanta Group modified after Higgins and Atkins, 1981		Sandy Springs and New Georgia Groups this paper	
-	Norris Lake Schist	Factory Shoals Formation	
Snellville Formation	Lanier Mountain Quartzite Member	Chattahoochee Palisades Quartzite	
nman Yard Formation	Promised Land Formation		
Norcross Gneiss	Wolf Creek Formation		
Clairmont Formation	Senoia Formation		
Wahoo Creek Formation		Powers Ferry Formation Undifferentiated	
Stonewall	Formation		
Clarkston Formation	Fairburn Member		
	Tar Creek Member		
Big Cotton Indian Intrenchment Creek Formation Quartzite		New Georgia Group	
Camp Creek Formation			

Lithologic descriptions of rocks in the Wolf Creek Formation, Norcross Gneiss and, in part, the Promised Land Formation (Atkins and Higgins, 1980) resemble lithologies in the New Georgia Group and may represent New Georgia equivalents. This correlation would require that other members of the Atlanta Group be part of an allochthonous sheet resting on the Wolf Creek Formation, etc. as was previously proposed in the Brevard Fault Zone section.

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ag	Austell Gneiss (Abrams and McConnell, 1981a; Abrams, 1983): fine-to coarse-grained blastoporphyritic to nonporphyritic orthogneiss composed of muscovite, biotite, oligoclase, quartz and microcline.
shg	Sand Hill Gneiss (this report): fine-to coarse-grained blastoporphyritic to nonporphyritic orthogneiss composed of muscovite, biotite, oligoclase, quartz and microcline. Generally contains more muscovite, quartz and plagioclase and less microcline than Austell Gneiss.
mrg	Mulberry Rock Gneiss (this report): medium-grained, equigranular muscovite-quartz-microcline-plagioclase orthogneiss.
d	Diabase dikes
SOUTHERN PIEDMONT P	ROVINCE AND BREVARD FAULT ZONE
	Atlanta Group (late Precambrian to early Paleozoic) (stratigraphic order revised after Higgins and Atkins, 1981):
ec	Camp Creek Formation (Higgins and Atkins, 1981): massive granite gneiss interlayered with thin, fine-grained, dark-green hornblende-plagioclase amphibolite.
icq	Intrenchment Creek Quartzite (Higgins and Atkins, 1981): spessartine quartzite and spessartine-mica schist interpreted in this report to be banded iron formation.
bei	Big Cotton Indian Formation (Higgins and Atkins, 1981): inter- calated biotite-plagioclase gneiss (locally porphyritic), hornblende- plagioclase amphibolite, and biotite-muscovite schist.
ca tc f	Clarkston Formation (Higgins and Atkins, 1981): sillimanite-garnet-quartz-plagioclase-biotite-muscovite schist interlayered with hornblende-plagioclase amphibolite (ca). Includes a unit composed only of schist termed the Fairburn Member (f); and a unit similar to Clarkston undifferentiated termed the Tar Creek Member (tc).
st	Stonewall Formation (Higgins and Atkins, 1981): intercalated fine-grained biotite gneiss, hornblende-plagioclase amphibolite and sillimanite-biotite schist.
wac	Wahoo Creek Formation (Higgins and Atkins, 1981): includes slabby, medium-grained muscovite-plagioclase-quartz gneiss, amphibolite, mica schist and epidote-calcite-diopside gneiss (calc-silicate).
se	Senoia Formation (Atkins and Higgins, 1981): garnet-biotite-muscovite schist interlayered with fine-grained amphibolite, local thin layers of spessartine quartzite (iron formation?), sillimanite schist and biotite gneiss.
cl	Clairmont Formation (Higgins and Atkins, 1981): interlayered medium-grained biotite-plagioclase gneiss and fine- to medium-grained hornblende-plagioclase amphibolite.
pl h	Promised Land Formation (Higgins and Atkins, 1981): includes massive to thinly layered, medium-grained, gray, banded biotite granite grees interlayered with fine-grained, dark-green to greenish

Wolf Creek Formation (Higgins and Atkins, 1981): thinly laminated, fine-grained amphibolite interlayered with lustrous, silvery, gray, biotite-muscovite schist.

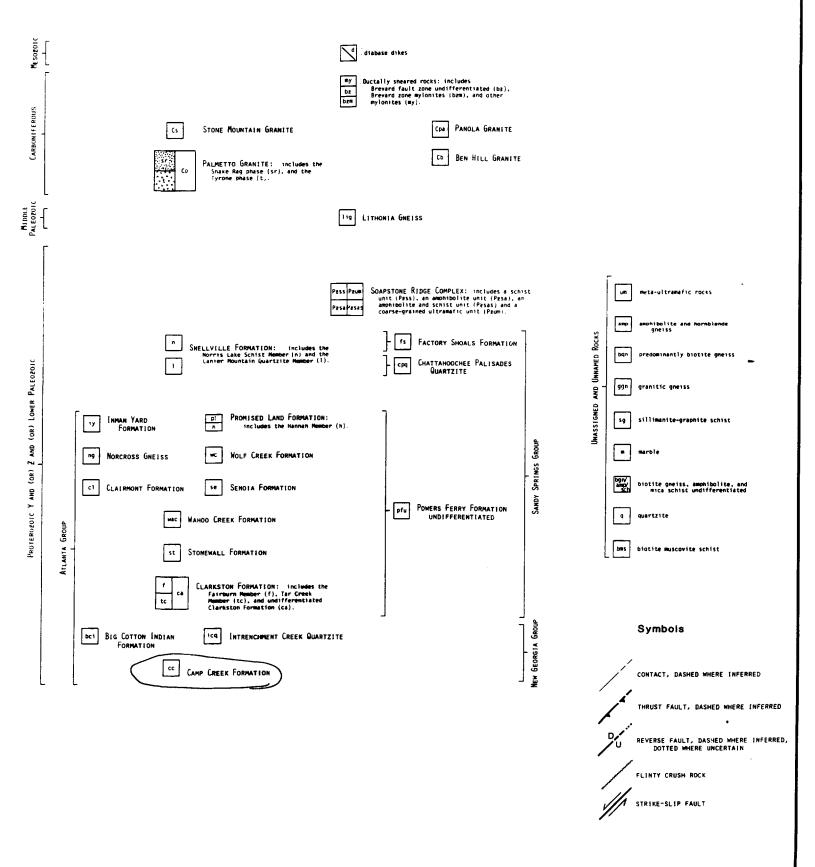
granite gneiss interlayered with fine-grained, dark-green to greenish black, blocky amphibolite. A thin quartzite and muscovite quartz schist unit near top of the Promised Land Formation is termed the

Hannah Member (h).

wc

Southern Piedmont and Brevard Fault Zone

(modified after Atkins and Higgins, 1980; and Kline, 1981)



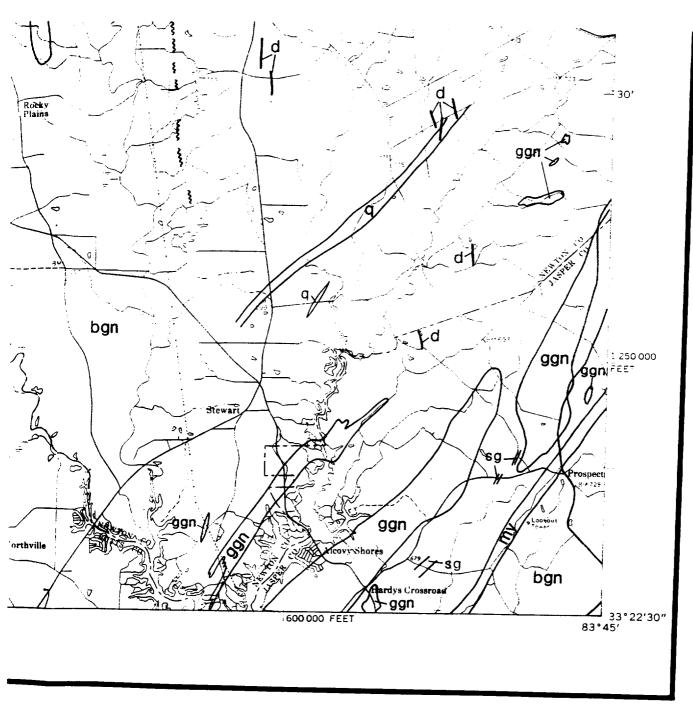
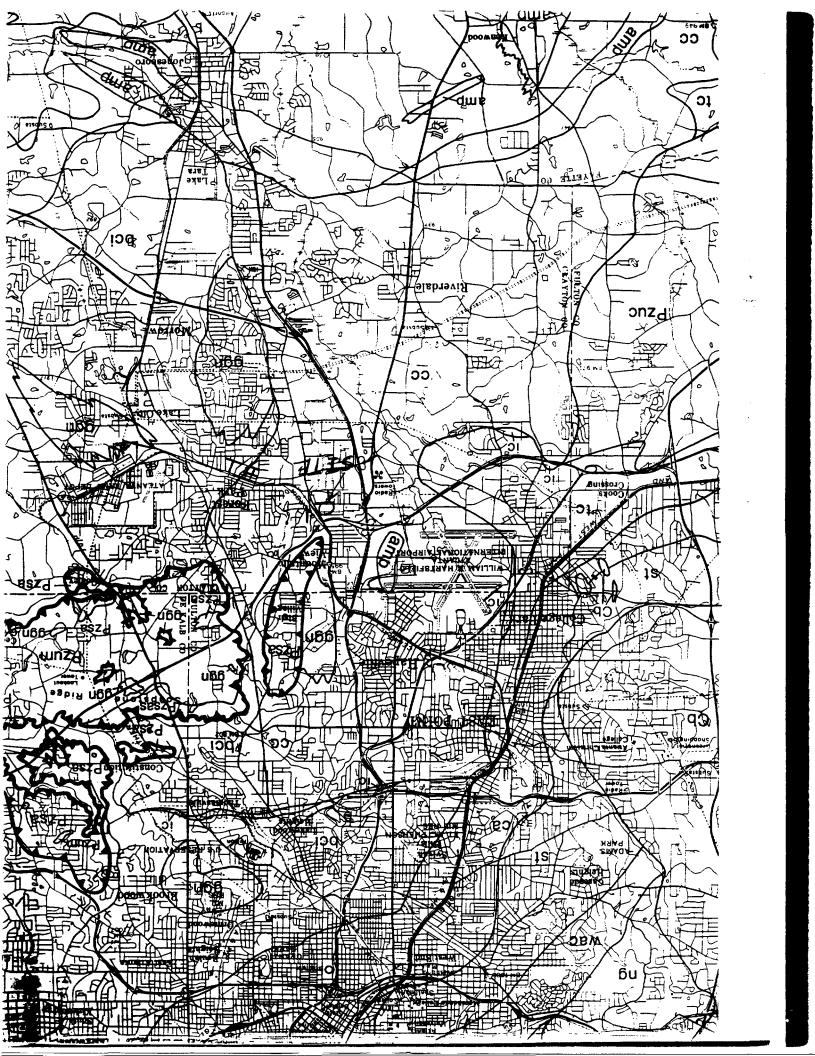


Plate I East, Bulletin 96





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Weter table Evaluating sites

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relings for topography.

Protograph showing relation of yold to drawdown.

Disprace showing relation of yold to drawdown.

Disprace showing yield of a well at two different pumping rates.

Disprace showing protogram to which despends of everage well increases yield.

Buildings of star types of ground conditions showing distribution of fractures.

Hydrograph shows that the water table generally declines in summer. points for topographic positions

3. Graph showing reting in points for soil thickness

4. Graph showing prebability of getting a certain yield from a well at different sites.

5. Photograph of countryside in the Blee Ridge province abouing approximate 1. Generalised geologic map.
2. Topographic map and profiles of ground surface abowing rating is

12. Shatch of dry some lifted up to show water table

TABLES

of excess of a well .

2. Concentrations of chemical constituents and their characteristic effects on Table 1. Use of sumerical rating of wall site to estimate the percent chance

water use in the region

Ξ

By H. E. LeGrand

Southeastern States

Ground Water of the Piedmont and Blue Ridge Provinces in the

GEOLOGICAL SURVEY CIRCULAR



Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

By H. E. LeGrand

INTRODUCTION

This circular summarizes the underground water conditions in the Piedmont and Blue Ridge provinces of the Southeastern States—the region shown on the grologic map (fig. 1).

There are several ways of developing water from the ground in this region, in earlier days aprings were used because they are common in coven or on lowland slopes. Almost all aprings in the region yield between § to 3 gallone per minute and rarely show a significant decline in yield during dry weather. Dag wells were common in the past, but they are being replaced by bored and drilled wells. Bored wells, like dag wells, are as much as 2 feet in

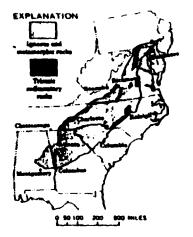


Figure 1.—Governited grotegic map. Areas underlate by Igovern and quatementality reads are bester satisfal to apparatual resting of most day areas materials by Telephone collegesters are the

diameter and are commonly lined with concrete or terra cotta pipe; these wells do not extend into herd rock and go dry if the water table falls below the bottom of the well. Drilled wells, which are now the most common source of ground-water supply and which are the chief concern of this report, are cased to the hard rock and extend as open holes into the rock. Although some drilled wells are as small as I inches to diameter and others are as large as 10 inches, the most common size is shout 5 or 6 inches. Almost every well in recent years has been properly constructed to prevent water on the ground from running down the outside of the casing into the well.

EVALUATING SITES

A special attempt is made to help those who are interested in the yields of wells. Because yields of the distribution of the property within distances as short as 100 feet, estimates of potential yields of prospective wells are difficult to make. This fact has led frequently to water shortages, excessive costs, inconveniences, or under anxiety in many cases. As the yield of a well is superedictable, the next best approach is to attempt to show, on a percentage basis, the chapts for a certain yield from a well for different conditions.

Although many factors determine the yield of a well, two ground conditions, when used together, serve as a good index for rating a well site. These conditions are topography and soil thickness. The ratings are based on the following statement: High-yielding wells are common where thick residual sells and relatively low topographic areas are combined, and low-yielding wells are common where this soils and hilliops are combined. By comparing conditions of a site according to the topographic and soil conditions one gets a relative

CHOIND WATER OF THE PERMINET AND BLUE REDGE PROVINCES IN SOUTHWASTERN STATES

rating value. For example, the following topographic conditions are assigned point values:

Points	Enpodraphy		
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18	Door to sensor catchesing area		
16	Drow in large confident area		

Figure 2 shows values for certain topographic conditions. Figure 3 shows rating values for soil thickness. The soil zone in this report includes the normal soils and also the relatively soft or weathered rock. The topographic conditions and soil conditions are separately rated, and the points for each are added to get the total points which may be used in table 1 to rate a site.

Using two well sites, A and B, as examples, we can evaluate each as to the potential yield of a well. Site 4, a pronounced rounded upland (4-point rating for topography in flg. 2) having a relatively thin soil (8-point rating for soil characteristic in flg. 3), has a total of 10 points. In table 1 the average yield for site A is 8 gpm (gallone per minute). This site has a 85-percent chance of yielding 3 gpm and a 40-percent chance of yielding 10 gpm. Site B, a

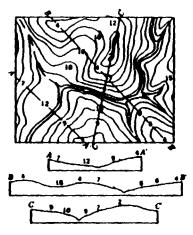
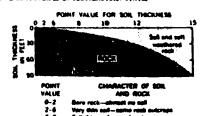


Figure 2. —Topographic map and profiles of ground excises absorbing



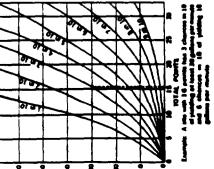
Plant 3. -Roden to pulse for realism conditions of and deliber-

ner duck and are from

Table 1.—Use of minerical rating of well site to estimate the percent chance of success of a well

[Data are based on maximum depth of 300 feet or maximum drawdown of water level of about 300 feet. No interference from pumping is assumed. Numerical rating is obtained by adding rating in points for topography and out thickness.]

Total	Aver	Chance of success, in percent, for						
pointe	464	a well to yield at least						
of a	(gpm)	3 SDu	0 abu	25 g pm	50 gpm	75 g pm		
5	2	48	1.0	•	2			
	3	50	30	,	3			
7	3	35	25		3			
•	4	55	30	11	3			
	3	60	35	12	4			
10		65	40	15	s			
11	7	70	43	19	7			
12		73	44	22	10			
13	11	77	50	24	12			
14	12	80	53	30	14			
15	14	83	54	33	18			
16	10	85	57	36	18			
17	17	86	60	40	20	12		
18	30	87	63	45	34	15		
19	23	98	84	50	25	10		
20	24	80	70	52	27	20		
21	20	80	12	54	30	22		
22	31	91	74	56	35	34		
23	34	92	76	50	38	26		
34	37	92	18	- 60	40	20		
25	39	93	86	63	43	38		
28	41	93	01		44	30		
27	43	94	82	##	40	40		
28	45	95	43	60	50	42		
39	46	95	84	71	53	44		
30	50	96	87	73	56	47		
30 4	50	97	91	75	60	50		
			L	L				



gan 4. - Petablity of graing a comple yield from a real of different other basing various wast-pubs salings.

age yield of 30 gpm, and a 73-percent chance of yielding 25 gpm. Referring to figure 4, we see that the the 19-point elle has less than 1 Scharce in 19 of yielding 40 gpm whereat the 18-point elle has better than as even chance of yielding 40 gpm. draw or slight sag is topography (18-point rating) having a moderately thick soil (12-point reting), has a total of 36 points, an aver-

and a few topographic retings are shown in figure 3. Wells leanted an exactors alopes are commonly more predictive than wells an convex alopes nor straight shops. Bread but align scenario alopes near suddien in genity relike updated areas are especially good sides for privational areas are especially good sides for privationally happen and the respectably good sides, the claim hand, shop well are especially good sides, and the plannid be received if surface designance and they should be areaded to surface of the gold to shop should be areaded at contamination to possible. Some tapagraphic conditions of the region

More difficulty is likely to occur in rating character of soil and rock than in rating



CACAGO WATTH OF THE PERSONNE AND BLUE ADDOLPHOYNCES BY SOUTHEASTERN STATES



topography. Everyone should be able to de-termine by observation if the soil is this floes than 7 soil and roth points as shown in figure 6) and if the soil is fairly thick (more than 10 soil and reck points), but the intermedial relings are difficult to make. If the observa-its maners of the soil and rock raing above the 6-point (this soil) value he may choose a 10-point value for the site with seaurance that he is fairly correct. While sparint of flist, which occurs as velue and as rock fragments on the ground, is not considered a true rock in this report because it persists in the soil sone; a quarts vota la many cases is considered to be a slightly favorable indication of a good well

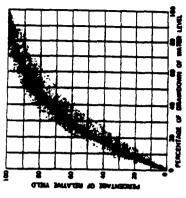
to be precise. One person may rate a particular site at 18 points, whereas another person may rate it at 17 points; such a small differmay rate if at 17 points; such a small difference in rating would not be maintending. Although everyone's rating will be within 8 points of an average rating for a site. The memorical rating system is not intended

2

The term "yield" is not definite but in the reported expectly of a well to produce union, generally deving a short pumping test. The union level is a cell will stabilize if a certain limited yield or withdrawal of union to maintained pried or withdrawal of union to maintained between a greater withdrawal or yield will consect the union to fell the many cases the water level continues to fall in many the pumping stope so that continuous pumping would result in a smaller yield than that eatimated earlier. The percentage of relative yield to not directly proportionals to the percentage of directly proportionals to the percentage of drawdown of the under level, put the

Tield for an average well in the region. Note that the region. Note that the yield-drawdown relationships of all wells he within the shaded some and that average conditions occur on or man the heavy like. As an example of the relation between yield and drawdown, we may consider a well 20 feet below land surface. (See fig. 1) This well yields do gen with a pumping level of 20 feet below land surface. (See fig. 1) This well yields to gen with a pumping level at a depth of marly 220 feet; the pump might better to set at 120 feet (50 percent of drawdown or half the thickness of the water) when about 30 gen or 50 percent of the relative yield could be related to well as a posttion make the better was unacconcumical to lower the water level of a well is a specific less the tiet the water fevel of a well is a specific mean the better water fevel of a well is a specific the greater percentage of drawdown. Figure 7 shows an approximate relation of drawdown to fresher percentage of yield is reached before

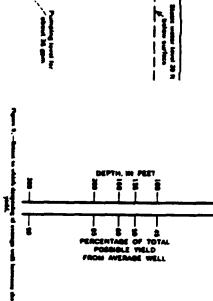
a well—aspecially in the Blue Ridge and Pled-mont provinces. Yields for various levels of the water in the puemped well are rarely known. The yields in this report are consid-ered to be standard for wells about 300 feet deep which are pumped about 12 hours each day and in which drawdown of the water level is about 200 feet; It is assumed that there is There is no simple definition of the yield of no interference by pumping from other wells, which would increase drawdown.



Plane 1.—The corn data than the beams is placed a cult in a country, the of many 10 planes of decision of the ma-ter data is placed as the country of decision of the country of the country of the country of planes of the country of the country of the country of the country of



200 R 000



most of the interconnecting fractures occur in a same no desper than 130 feet below the land surface, it may be wise to drill an desper than 130 feet if the yield in very poer, or so desper than 300 feet in almost all cases.

PRACTURES IN THE ROCK

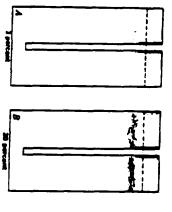
Figure 10 illustrates aix different fracture politores is rectio penetrated by wells. To simplify the illustrations the water table and sell thickness are sensidered uniform, and each well, cased to 30 feet, is 250 feet deep. The approximate number of times such purchased tractures occurs is 160 wells is shown to percentage beneath each type. Well A penetrates as fractures below the case by the penetrates as fractures as feet below the case; therefore, the well joides as water. Well I penetrates a fracture sees in which two or more fractures occur a few feet below the cooling. This type of well is common. It may joid as much as 10 to 20 gas for a period of award a minutes until the fractures are drained. Then its joids well into fracture well to be well by the assumed of wells in the sees of fracture occur and the well the sees of fractures of rect. Then part of the well below the fracture case constitutes as water and acts only as a storage reservoir late which well only as a storage reservoir between more met actoristics only one fracture, a large one sear the crosse with increases drawdown. Well C penetrates only one fracture, a large one sear the

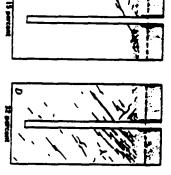
How doep should a well be drilled? This special wall in not easy to answer for an individual well. In most places fractures is the rock get smaller and fewer with depth and deep drilling may not be occuranted. Figure 3 shows the percentage of total yield for certain

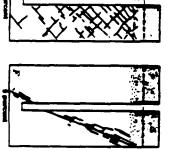
Type I. -This of a well as two different pumping state.

DEPTH OF WELLS

CROUND WATER OF THE PERMONT AND BLUE RECEI PROVENCES IN SOUTHEASTERN STATES







The River of the state of the s

continuous pumping, will dispend on the permeshility of the soil and weathered rock and
on the amount of water that is released to the
fracture. Well D possetrates several fractures,
which contribute small assessed of water, and
a large fracture at a depth of about 30 feet.
Well E penetrates several meall—to mediumsized fractures. These fractures are larger
and more closely spaced in the upper part of
the bedrock. Well E penetrates unly one fracture—a large one below a depth of 300 feet. top of the fresh rock. This well is similar to well 9. It may yield considerable water for a few minutes until the stored water in the fracture is drained. The perennial yield, under

BYRY MALL

The water table, or upper surface of the underground reservoir, centimensly Ruchadae and reflects changes in underground starage, During droughts we see evidence of a falling water table when many shallow wells go dry. We also can detect a lowering of the water table locally around water from which water is pumped. There is a continual discharge of ground water by seepage into streams, by evaporation, and by transpiration through vegetation. The discharge causes a gradual lowering of the water table except for period daring and immediately after significant precipitation when recharge to the underground reservoir exceeds the discharge from it and the water table rises. Figure 11 shows the frends of water-level fluctuation in a well at Chapel Hill, N.C. The water level in this well is controlled entirely by natural conditions, and its fluctuation in typical of that in the region. There is a characteristic seasonal change in the water table, which begins to decline in April or May owing to the increasing second of the vegetation has become dormant, the precipitation first makes up the nummertime soil-moisture deficiency and then again the comes effective in producing recharge, and the water table begins to the underground reservoir is approximately equal to the discharge from it, so that the water table



Paper 11.—The cases sales generally desiling to manuar and fall fact from me high bred to easily spring, or down by the manual of this could be Chapel 1988, 21, C.

The following table shows the percentage of wells that reach their maximum yields at certain depths below which drilling is useless. As

hiptho in an everage well.

WATER TABLE

Table 2 — Come entestions of chemical constituents and their characteristic effects on water use in the region

(Concentration in parts per million except as indicated. Occurrence, where noted, is given in parenthese after concentrations)

Constituents	Concentration	Characteristic effects on water use
Suica (510 ₂)	Rarely less than 15 or more than 45, commonly 20 to 35	Forms hard scale in pipes and bollers
Iron (Fe)	Commondy less than 0.3 ta	In the region.
	matural water but corrogion	wieneils, and flatures reddish brown.
	with pH less than 6.8 causes	
	a fairly common tree prob-	
Calcium (Ca) and		
magnesium (Mg)	Rerely less than 5 or more	Cause most of the beatless of the
		Correlate preparation of maker (Sec
	in water beneath light.	bardson below.)
	colored solls and 15 to 50 in	
	water Demonth dark-colored	
Bicarbonate (HCO ₃)	Rerely less than 15 or more	Concentrations is reston and and
	than 150, commonly 30 to	erally high someth to cause transfer
Contraction of the contraction o	100.	
Suitate (SO4)	Rarely less than I or more	Concentrations in region are not gen-
Chorde (Cu	then 100, commonly 1 to 40.	erally high enough to cause trouble.
The state of the s	therety less than 1 or more	Sally taste to water having more than
Fluoride (F)	Racely more than 1 commonly	
	0.0100	_ز
		an uniter retains secay of teeth, but
		cause mottled enames of teeth
Nitrate (NO ₃)	Rarely more than 20, com-	Where concentration is greater than
	monly less than 10.	20 ppm, contamination from sewage
		may be evepected. Water of con-
		contrations greater than 45 ppm
Dissolved solids	Total of all mineral	may be harmful to babies.
	real of all mineral matter	Water containing more than 1,000 ppm
	78 to 150.	or dissolved solide is unsuitable for
Hardness as equivalent		
CaCO ₃	Rereiy less than 10 or more	Causes consumption of soap before
	then 150 (commonly 10 to	lather will form. Hard water forms
	to in water beneath light-	
	celered solls and 40 to 200	besters. Water whose bardness to
	in which beneath dark.	less them 60 ppen is considered soft;
	Colored solls).	61 to 130 ppm, moderately hard;
		131 to 180 ppm, Mard; more than
Hd.	Rarely less than pH of 3.3 or	Values less than 7 0 indicate actions
	more than 7.5 (commonty	and corrosiveness of water sen-
	5.5 to 6.8 in water beneath	erally increases with decreasing
	light-colored soils and 6.8	H.
	to 7.5 in water beneath	

GROUND WATTH OF THE PEDMONT AND BLUE ASSCE PROVINCES BY SOUTHEASTERN STATES

at the end of the year is at about the same level as at the beginning of the year. Wells dirilled into rock may, when pumped at hell capacity, yield slightly less during the driest part of the year when the water table is low. Yet there appears to be no evidence to enpoint the general belief that the water table has been declining during recent years.

CHEMICAL QUALITY OF THE WATER

in comparison with ground water in widely acattered regions of the world, the water in the Piesmont and Blue Ridge province ranks among the best in chemical quality. (See table 2.) book of the water is low in lotal desoired solids and is generally soft, but some is moderately hard.

fron in water is the most common complish. As little as 0.4 pen (parts per million) will cases a red state on plumbing futures. About 3 of every 10 wells yield water with less than 0.5 pem of iron. About 4 of 10 wells yield water with hest shaden of order of 10 wells yield water with hest enough iron to cause a alight state, and about 1 of 10 wells yields weller that has considerable iron. Some iron problems result when iron is dissolved from rocks, and other problems result when water, moving through iron pleas, consequently picks up a brown iron stain by corrosine. It is important to determine the source of the iron, whether dissolved from the rocks or from the pipes, before methods for its removal are employed. Most of the water is satisfactory for use without any type of treatment (table 2). It is an analysis of the water should be saced as soon as a well its drilled to determine it freatment is necessary. It is not possible to determine the studies.

CONTABBATION OF GROUND BATER

in view of the many bundreds of thousands of wails like are interspersed with about an equal sember of engite tanks and other ware sites, it is proper to give serious aftention to the possibility of contaminating an individual water supply. The tendency for ground water supply. The tendency for ground water subtreally from upland areas toward effects waites to sevoid contamination. A well that is pumped may modify the natural movement of water and the or contaminated water lossed it; but consisting in the condition is more likely where the soil is this or absent than where it is thick. Care

should be taken to see that no water from the land surface can seep easily into the well send surface can seep easily into the well selemportant but so is the waste site. In most case; the chances of contaminated water from a waste site moving late a well are not easy to predict, but a few general determent case to predict, but a few general determent can be made. For example, at a waste site (1) a deep water table is safer than this soil or rock outcrope, (3) sandy soil with some clay may be better than a clean sandy soil or a sitely clay soil, and (4) a slope of both the land surface and the water table away from a well is better than one lost

The soil and weathered rock are generally effective to preventing wade materials from passing through to underlying rock fractures, but the combination of (1) certain types of wastes, (2) excessive quantities of disposed wastes, and (3) thin soils may result in contaminated water reaching befrock fractures. Once is the bedrock fractures that of water may move easily to water supplies. Only a small percentage of wells have been contaminated, but proper care in locating and constructing wells and waste after must be taken to minfmiles the risk of contamination. Minimum etandards appetited by health officials, such as those religing to permability of the soil, distance between a well and a waste site, and depth of the water table, must be followed.

GEMERAL STATEMENTS ABOUT GROUND WATER BY THE REGION

L. Ground water may be considered as occurring in an underground reservoir, the water being held in the open spaces of the rock materials. The water table, representing the lop of the reservoir, generally lies in the clay, or disintegrated rock materials. In the lower part of the reservoir, water occurs in interconsecting fractures in bedrock; the fractures diminish in mamber and aise with interesting depth. Water enters the fractures by seeping through the overlying clay, and drilled wells draw water from these fractures. The source of this water is precipitation in the general area of a well and not in some remote place.

3. A layer of residual soil and weathered rock lite on the fresh rock is smoot places; the Unichness of the soil and weathered rock ranges from zero to slightly secre than 156 feet.

CROLDED WATER OF THE PRESADET AND BLUE

Then 13.—On one (above rate whis) likes up in dury white bulls or graften of anteriord size. Moreomen of with (county tends to be downwest in the dry men and learned stream in the moneoust series.

- ground nurface. Ground water, like surface water, has the tendency to drain away from the balls to the valley. This tendency hatps in planning the location of wells in relation to other wells and to sources of possible conistion that approximately conforms with surface topography, although the water table is somewhat flatter. (See Hig. 12.) For example, a creek or river in the surface appression the water table in a valley, but beneath a hill the water table may be 30 to 76 feet below the The water table has a hill and valley re-
- 4. A closs network of streams prevails, and in most places on an upland area a perenaial stream is less than I mile avery.
- 5. Toward the streams is a continuous flow of ground water. Sons of the outflowing ground water is used up by evaporation and by transpiration of plants in the valley area, the remainder of the water discharges as small springs and so bank and channel seepage into the streams.
- 9. The satural movement of ground water is relatively short and is almost everywhere re-grateful to the zone underlying the gross topo-graphic shape extending from a particular lead-surface divide to the adjacent atreams.

contracting matter of permeability between rock fractures and overlying colls cause the depresent part of the water table to arrend uneventy amount a well. Where two havily pamped wells are within a few handred feet of each other, there is a strong likelihood of some interference of pamping lavel between the two, but is most case there is not any epreciable interference between two years and the few handred feet agent. From a pamped well the depresent part of the water table rank or atment to the water table rank or standard part of the water table rank or atment to the water table frauly arthurth beneath a percential drawn or beneath a hilltop to a slope on the opposite side. Well interference is local, and there is ly in the shape of an inverted come, the apax of the come being in the well; however, the er-rate distribution of rock fractures and the 7. In ideal cases the pumping of a well causes the water table to be depressed amounthno regional lowering of the water cause of pumping.

- supply by increasing the depth of the wall. Yet this chart become powers as the well despense because the letter connecting fractures and the ability of the rects to store and transmit water decrease algulicantly with depth. Mare than 90 percent of all ground water eccura is than 90 percent of all ground water eccura is the first 100 feet below the water table. One erally two wells 200 feet deep sech will yield 8. The relation of the depth of a well to yield of the squifer is not almayle, in spile of some beliefs, unter aiready swallableto a well is rarely lost by drilling despect; therefore, there is always a chance of getting a larger nore water than one well 400 feet deep.
- is emphasized. The great majority of veita are located on Mills or emooth upland slopes between of common the slopes between of common the slopes headen. Yet the percentage of low-yielding until it manch greater on Mills and upland one ver alopes than its bestiand or draw it common that had greated from a valley to seade or sway-bestiad position in a ridge. Seep-sided depressions, such as guilten and revises, abmud not be considered acceptable. 9. The relationship of topography to other for wells.
- and lend to here a more stable year-road didd where between a stable manufer of soil than where hare rock crops out. The presence of a soil cover and the absence of rock outcrop 10. In general, wells are more productive

water that the fractures can feed into the settle and the amount of water available to drain through the overlying city into the fractures feeding the well. Failure to have browledge of water-level fluctuations as a result of pumping is the tawn of many well problems and of the erroneous conclusion that well supplies are not dependable. It a well tends to have as unetable yield, it is probably overpumped. A reduction in the rate of pumping and conservation in the rate of pumping and conservation in the rate of pumping and conservation in the rate of pumping and conservation in the rate of the water level will result in a personnially safe yield. Constant pumping at a moderate rate does not damage a well. a stable adjustment between the amount of AIDCA PROVINCES IN SOUTHBASTEUR STATES

- lying a light-colored soil to yield water that is low in dissolved mineral matter and is soft. soils (dark red, brown, and yellow) tend to yield water that is slightly hard, or hard, and 14. There is a tendency for rocks under-On the other hand, rocks underlying deriver that may contain objectionable amounts of
- to the water table is an indication of a good yield of a potential well, but this is not a rule to follow. In fact, where the water table is only a few feet beneath the land aurisce on an upland area, the rock fractures may be so scarce that water may not be able to move downward in the rock: It is held near the 15. Many people think that a shallow depth ground surface and perhaps is shanted out to the land surface as a wet seepage apot on a steep slope.
- the availability of ground water in the region.
 These actions arise from lack of investege of the occurrence and novement of ground water and the behavior of wells. The common arroneous statement that a certain fown in the region could not depend on wall water stems from the existence of a limited sumber of people to convert from well supplies to a traded surface value supply, seek conversion commonly occurs when the town requires more than 999,000 gallons of water per day, wells: sever has the underground reservoir beneath any town or city in the region been completely depleted of its weter. There has been a landemcy for towns of about 2,000 may not produce. For towns have the experi-enced persons with diversified knowledge of 18. There are many mistaken notions about an amount which only a few wells in aggregate wells and ground-water conditions to privi municipal surface-water supplies.

while to store water and to iransmit it to wells.

Where there is a good soil cover, the water table generally lies in it; therefore, the storage capacity in the vicinity is much greater than where here rock is exposed and where the only water in storage is in the rock fractures that might be quickly drained. jecent valley; in fact, the soil cover suggests that interconnecting rock fractures are availsuggest that water moves downward into the rock and is not readily shunted toward the adIt. Simple clear-cut statements about the water-yielding properties of the various types of rocks are not easy to make. There are many varieties of teneous and metamorphic rocks, but for a discussion of their groundwater properties they may be grouped as follows: It! Somewhat massive typesus rocks, such as greadle, and (2) metamorphic rocks, such as achiefe, gesisses, and slates, which may show as alianment of minerals or an alianment of minerals or an alianment of minerals or an alianment of minerals or an alianment. along which water may move, in some places a type of rook may have distinctive usterbearing characteristics, but if an it is also likely to show distinctive topographic and souliments features. Topography and soil-mantic features are readily observed and may be used as criteria for predicting the water-yielding potential of a well site, whereas the water-bearing characteristics of a type of rock by itself may be observed. At any rate, there are too many complex factors involved to justify generalisations about the yield of wells in individual types of rock.

- well. The drawdown increases with an in-crease in the rate of pumping, although this relation is not simple. For example, a well yielding 30 gens with a drawdown of 30 feet will not double its yield by increasing the drawdown to 100 feet. Included, it will yield less than 40 gens and prihage no more than 25 to 30 gens with a drawdown of 100 feet. 12. Whenever mater is pumped from a well, the water level to lowered in and around the
- tend to decline gradually in yield. This fact may be due to the following circumstances. The siss and setting of a pump are determined from a short bailer or pamping test when the well in completed. Such a short test may not cames the first water is withdrawn form stor-age in the rock materials, and many hours, days, or even months may pass before there 13. Some wells that are pumped heavily indicate the long-term yield of the well be-cames the first water is withdrawn form stor-

SOURCES OF INFORMATION

There are many sources of information about ground-water conditions in specific parts of the region. At least one agency in each State has cooperated financially with the U.S. Geological Survey, and these agencies

have contributed in some way to the results of this report. Purther information about reports published or work in progress may be obtained from the district offices of the Geological Survey in each State or from the respective State cooperating agencies.

GROUND-WATER DATA FOR GEORGIA, 1987

U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 88-323

GROUND-WATER DATA FOR GEORGIA, 1987

By C.N. Joiner, M.S. Reynolds, W.L. Stayton, and F.G. Boucher

U.S. GEOLOGICAL SURVEY

Open-File Report 88-323

Prepared in cooperation with the

GEORGIA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION GEORGIA GEOLOGIC SURVEY



Doraville, Georgia 1988

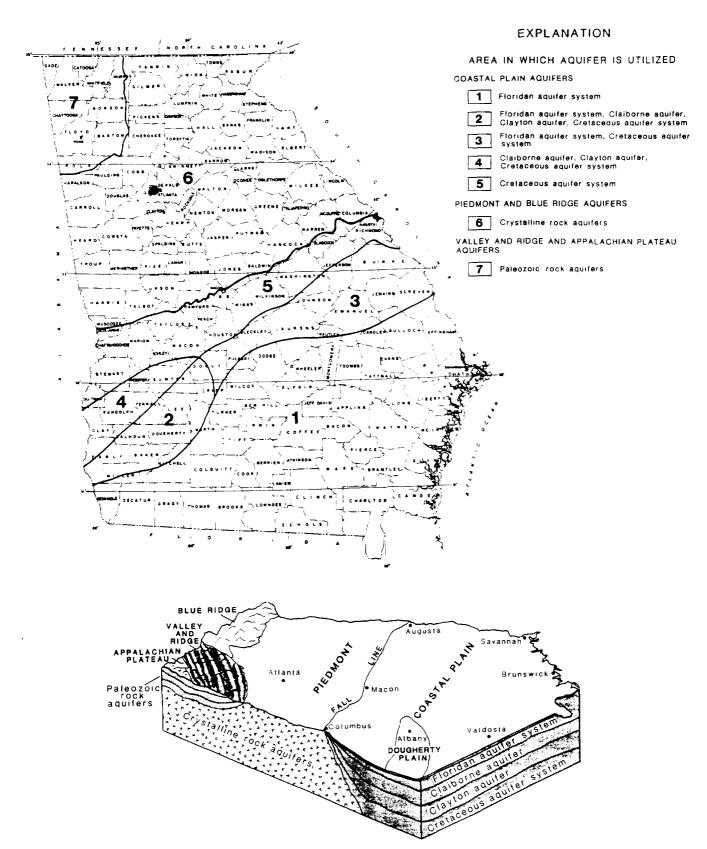


Figure 1.1-1.—Areas of utilization of major aquifers and block diagram showing major aquifers and physiographic provinces of Georgia.

2.2 Crystalline Rock Aquifers

Although individual crystalline rock aquifers are not laterally extensive; collectively they yielded an estimated 91 Mgal/d in 1985 (Turlington and others, 1987), primarily for rural supply. Ground-water storage occurs in unconsolidated material overlying the crystalline rock and in joints, fractures, and other types of secondary openings within the rock (Cressler and others, 1983).

Ground-water levels in the crystalline rock aquifers are affected mainly by precipitation and evapotranspiration. Rainfall in the area is heavy in winter and midsummer and relatively light in spring and fall. The driest season of the year is fall. Ground-water levels rise rapidly with the onset of late winter rains and reduced evapotranspiration, and generally reach their highest levels for the year in March or April. Increases in evapotranspiration and decreases in rainfall during the spring and early summer cause ground-water levels to decline. Heavy rainfall in midsummer results in small rises in ground-water levels, but a lack of recharge in the fall causes water levels to decline to the annual lows, which generally occur in October or November.

During 1987, the mean water levels at wells 10DD02 in Fulton County, 11FF04 in DeKalb County, and 19HH12 in Madison County were from 0.2 to 1.3 ft higher in 1987 than in 1986. By the end of March, water levels in the wells had recovered 1.5 to 4.8 ft from the record lows measured during the 1986 drought. However, a new record low was measured at well 10DD02 in early December. The decline was in response to local pumping at the end of 1987, and water levels were from about the same to 1.6 ft lower than at the end of 1986.

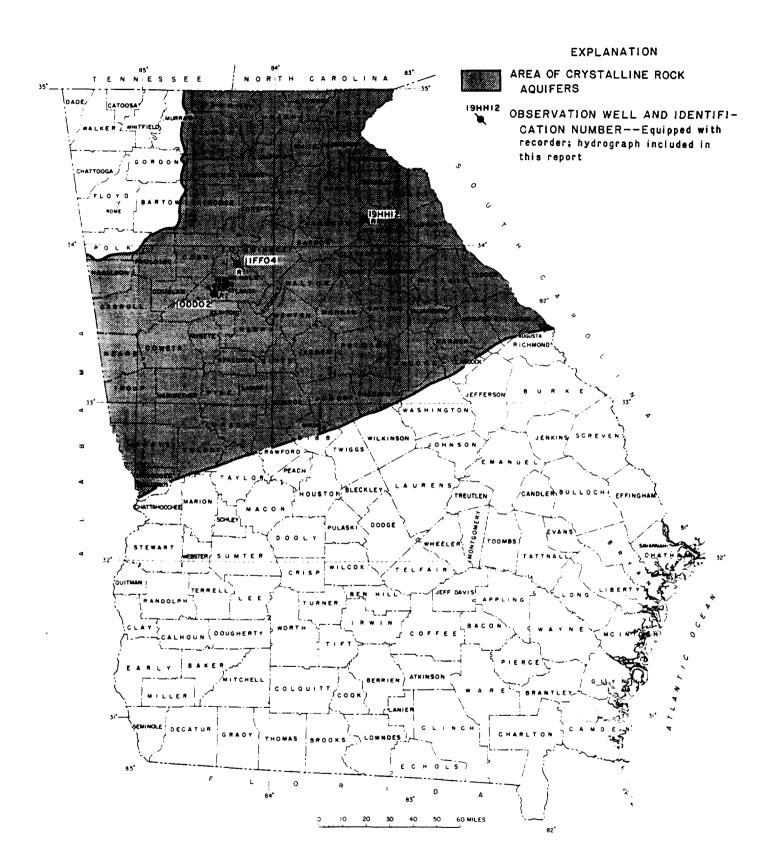
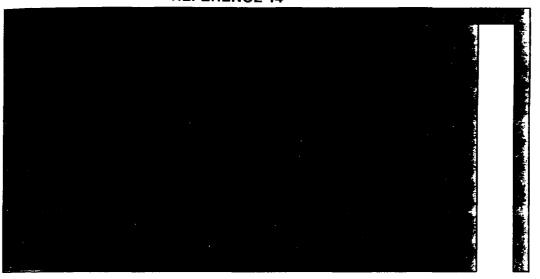


Figure 2.2-1.—Location of observation wells in the crystalline rock aquifers.



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GROUNDWATER

Prentice-Hall, Inc. Englewood Cliffs, New Jersey 07632 If a temperature gradient can cause fluid flow as well as heat flow in a porous medium, it should come as no surprise to find that a hydraulic gradient can cause heat flow as well as fluid flow. This mutual interdependency is a reflection of the well-known thermodynamic concept of *coupled flow*. If we set $dh/dl = i_1$ and $dT/dl = i_2$, we can write a pair of equations patterned after Eq. (2.22):

$$v_1 = -L_{11}i_1 - L_{12}i_2 (2.23)$$

$$v_2 = -L_2 i_1 - L_{22} i_2 (2.24)$$

where v_1 is the specific discharge of *fluid* through the medium and v_2 is the specific discharge of *heat* through the medium. The L's are known as *phenomenological* coefficients. If $L_{12} = 0$ in Eq. (2.23), we are left with Darcy's law of groundwater flow and L_{11} is the hydraulic conductivity. If $L_{21} = 0$ in Eq. (2.24), we are left with Fourier's law of heat flow and L_{22} is the thermal conductivity.

It is possible to write a complete set of coupled equations. The set of equations would have the form of Eq. (2.23) but would involve all the gradients of Eq. (2.21) and perhaps others. The development of the theory of coupled flows in porous media was pioneered by Taylor and Cary (1964). Olsen (1969) has carried out significant experimental research. Bear (1972) provides a more detailed development of the concepts than can be attempted here. The thermodynamic description of the physics of porous media flow is conceptually powerful, but in practice there are very few data on the nature of the off-diagonal coefficients in the matrix of phenomenological coefficients L_{ij} . In this text we will assume that groundwater flow is fully described by Darcy's law [Eq. (2.3)]; that the hydraulic head [Eq. (2.18)], with its elevation and pressure components, is a suitable representation of the total head; and that the hydraulic conductivity is the only important phenomenological coefficient in Eq. (2.21).

2.3 Hydraulic Conductivity and Permeability

As Hubbert (1956) has pointed out, the constant of proportionality in Darcy's law, which has been christened the hydraulic conductivity, is a function not only of the porous medium but also of the fluid. Consider once again the experimental apparatus of Figure 2.1. If Δh and Δl are held constant for two runs using the same sand, but water is the fluid in the first run and molasses in the second, it would come as no surprise to find the specific discharge v much lower in the second run than in the first. In light of such an observation, it would be instructive to search for a parameter that can describe the conductive properties of a porous medium independently from the fluid flowing through it.

To this end experiments have been carried out with ideal porous media consisting of uniform glass beads of diameter d. When various fluids of density ρ and dynamic viscosity μ are run through the apparatus under a constant hydraulic

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gradient dh/dl, the following proportionality relationships are observed:

$$v \propto d^2$$
 $v \propto \rho g$
 $v \propto \frac{1}{\mu}$

Together with Darcy's original observation that $v \propto -dh/dl$, these three relationships lead to a new version of Darcy's law:

$$v = -\frac{Cd^2\rho g}{\mu} \frac{dh}{dl} \tag{2.25}$$

The parameter C is yet another constant of proportionality. For real soils it must include the influence of other media properties that affect flow, apart from the mean grain diameter: for example, the distribution of grain sizes, the sphericity and roundness of the grains, and the nature of their packing.

Comparison of Eq. (2.25) with the original Darcy equation [Eq. (2.3)] shows that

$$K = \frac{Cd^2\rho g}{\mu} \tag{2.26}$$

In this equation, ρ and μ are functions of the fluid alone and Cd^2 is a function of the medium alone. If we define

$$k = Cd^2 (2.27)$$

then

$$K = \frac{k \rho g}{\mu} \tag{2.28}$$

The parameter k is known as the specific or intrinsic permeability. If K is always called hydraulic conductivity, it is safe to drop the adjectives and refer to k as simply the permeability. That is the convention that will be followed in this text, but it can lead to some confusion, especially when dealing with older texts and reports where the hydraulic conductivity K is sometimes called the coefficient of permeability.

Hubbert (1940) developed Eqs. (2.25) through (2.28) from fundamental principles by considering the relationships between driving and resisting forces on a microscopic scale during flow through porous media. The dimensional considerations inherent in his analysis provided us with the foresight to include the constant g in the proportionality relationship leading to Eq. (2.25). In this way C emerges as a dimensionless constant.

The permeability k is a function only of the medium and has dimensions $[L^2]$. The term is widely used in the petroleum industry, where the existence of gas,

oil, and water in multiphase flow systems makes the use of a fluid-free conductance parameter attractive. When measured in m^2 or cm^2 , k is very small, so petroleum engineers have defined the *darcy* as a unit of permeability. If Eq. (2.28) is substituted in Eq. (2.3), Darcy's law becomes

$$v = \frac{-k\rho g}{\mu} \frac{dh}{dl} \tag{2.29}$$

Referring to this equation, 1 darcy is defined as the permeability that will lead to a specific discharge of 1 cm/s for a fluid with a viscosity of 1 cp under a hydraulic gradient that makes the term $\rho g \, dh/dl$ equal to 1 atm/cm. One darcy is approximately equal to 10^{-8} cm².

In the water well industry, the unit gal/day/ft² is widely used for hydraulic conductivity. Its relevance is clearest when Darcy's law is couched in terms of Eq. (2.4):

$$Q = -K\frac{dh}{dl}A$$

The early definitions provided by the U.S. Geological Survey with regard to this unit differentiate between a laboratory coefficient and a field coefficient. However, a recent updating of these definitions (Lohman, 1972) has discarded this formal differentiation. It is sufficient to note that differences in the temperature of measurement between the field environment and the laboratory environment can influence hydraulic conductivity values through the viscosity term in Eq. (2.28). The effect is usually small, so correction factors are seldom introduced. It still makes good sense to report whether hydraulic conductivity measurements have been carried out in the laboratory or in the field, because the methods of measurement are very different and the interpretations placed on the values may be dependent on the type of measurement. However, this information is of practical rather than conceptual importance.

Table 2.2 indicates the range of values of hydraulic conductivity and permeability in five different systems of units for a wide range of geological materials. The table is based in part on the data summarized in Davis' (1969) review. The primary conclusion that can be drawn from the data is that hydraulic conductivity varies over a very wide range. There are very few physical parameters that take on values over 13 orders of magnitude. In practical terms, this property implies that an order-of-magnitude knowledge of hydraulic conductivity can be very useful. Conversely, the third decimal place in a reported conductivity value probably has little significance.

Table 2.3 provides a set of conversion factors for the various common units of k and K. As an example of its use, note that a k value in cm² can be converted to one in ft² by multiplying by 1.08×10^{-3} . For the reverse conversion from ft² to cm², multiply by 9.29×10^{2} .

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Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

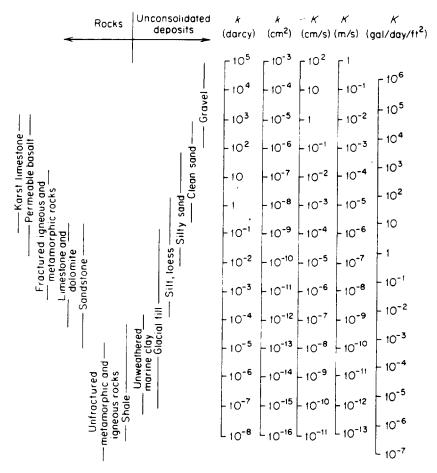


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

		Permeability, k*		Hydraulic conductivity, K				
	cm ²	ft²	darcy	m/s	ft/s	U.S. gał/day/ft²		
cm ²	1	1.08 × 10-3	1.01 × 108	9.80 × 10 ²	3.22×10^{3}	1.85 × 10°		
ft ²	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99 \(106	1.71×10^{12}		
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}		
m's	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}		
ft's	3.11×10^{-4}	3.35×10^{-7}	3.15×10^4	3.05×10^{-1}	1	6.46×10^{5}		
U.S. gal: da	$y/ft^2 5.42 \times 10^{-10}$	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-7}	1.55×10^{-6}	1		

^{*}To obtain k in ft², multiply k in cm² by 1.08 \times 10⁻³.

الميدو

GROUND WATER

IN THE GREATER ATLANTA REGION,

GEORGIA

Ву

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Georgia Department of Natural Resources

Joe D. Tanner, Commissioner

Environmental Protection Division

J. Leonard Ledbetter, Director

Georgia Geologic Survey
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Prepared in cooperation with the U.S. Geological Survey

Atlanta

1983

In table 7, which lists chemical analyses of well water, some wells retain numbers used in previous reports.

WATER-BEARING UNITS AND THEIR HYDROLOGIC PROPERTIES

The part of the GAR included in this study lies wholly within the Piedmont physiographic province (Clark and Zisa, 1976; Fenneman, 1938). The area is underlain by a complex of metamorphic and igneous rocks that have been divided by various workers into more than 50 named formations and unnamed mappable units. Individual rock units range in thickness from less than 10 ft to possibly more than 10,000 ft.

Regional stresses have warped the rocks into complex folds and refolded folds, and the sequence has been injected by igneous plutons and dikes and broken by faults. Erosion of these folded and faulted rocks produced the complex outcrop patterns that exist today. The large number of rock types in the area

and their varied outcrop patterns greatly complicate the occurrence and availability of ground water in the area. Nevertheless, many of the more than 50 named formations and unnamed mappable units in the GAR are made up of rocks that have similar physical properties and yield water of comparable quantity and chemical quality. Thus, for convenience, the rocks in the report area have been grouped into nine principal water-bearing units and assigned letter designations. The areal distribution of the waterbearing units and their lithologies are shown on plate i. Data on wells in the water-bearing units are summarized in tables 1-3.

OCCURRENCE AND AVAILABILITY OF GROUND WATER

Ground water in the GAR occupies joints, fractures, and other secondary openings in bedrock and pore spaces in the overlying mantle of residual material. Water recharges the underground

Table 1.—Summary of well date for the Greater Atlanta Region

		Y	ield		pek	Casta	t depth	ī	opography	(percent o	of walls	in each	esting)	
Water- bearing	Number of		l/ein)		t)		ft)		Broad	Uplands-	Draw, hollow	Stream		
unit	wells	Range	Average	Range	werage	Range	Metage	Slope	loviends	cresta		Lake	Seddle	Other
A Amphibolics- gneiss- schist	385	20- 275	56	35 2,175	294	0- 200	60	22	35	22	•	11	2	4
8 Granitic gneiss	164	20 - 348	72	40 825	271	3- 266	54	33	45	2	14	6	0	0
C Schist	165	20- 150	47	67 - 700	195	4 144	53	19	L9	27	20	l I	4	o
D Biorite gneiss	70	20- 351	56	82- 710	270	7 140	56	20	27	36	6	11	a	0
E Mefic	32	20 - 671	79	67 386	191	9- 116	46	17	35	28	3	17	0	0
F Granice	43	20- 150	43	43- 422	192	11-	57) 0	30	15	15	ιο	0	0
G Cataclastic	55	20- 225	74	110- 500	323	8 207	84	4	75	15	4	2	0	0
H Quartzite	12	20 - 200	72	122- 500	297	30- 85	58	45	9	27	18	0	0	0
J Carbonate	5	31- 150	76	24 0- 505	376	28- 314	130	0	100	0	0	o	0	0

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openings by seeping through this material or by flowing directly into openings in exposed rock. This recharge is from precipitation that falls in the area.

Unweathered and unfractured bedrock in the report area has very low porosity and permeability. Thus, the quantity of water that a rock unit can store is determined by the capacity and distribution of joints, fractures, and other types of secondary openings. The quantity of stored water that can be withdrawn by wells depends largely on the extent to which the rock openings are interconnected.

The size, spacing, and interconnection of openings differ greatly from one type of rock to another and with depth below land surface. Open joints and fractures tend to become tighter and more widely spaced with increasing depth. Joints and other openings in soft rocks such as phyllite tend to be tight and poorly connected; wells in rocks of this character generally have small yields. On the other hand, openings in more brittle rocks such as quartizite and graywacke tend to be larger and are better connected; wells in these rocks normally supply greater yields. Other rocks, including amphibolite, schist, and gneiss, are variable in the size and connection of secondary openings and generally yield small to moderate quantities of water to wells. Carbonate rocks, which include marble, can contain much larger and more extensively interconnected fracture systems. Openings in carbonate rocks commonly are enlarged by solution, and are capable of transmitting large quantities of water.

Effects of Drainage Style

The GAR is divided nearly in half by the Chattahoochee River, which follows a comparatively straight southwesterly course for nearly 110 miles across the area (fig. 1). Streams in the north half of the area, including the Chattahoochee River and its tributaries, mainly have rectangular and trellis drainage styles. In contrast, streams in the south half of the area, beginning at about the south edge of the Chattahoochee River basin, have a dendritic drainage style (Staheli, 1976).

Streams having rectangular drainage style flow in strongly angular courses that follow the rectangular pattern of the joints that break up the rocks. Areas having trellis drainage style are characterized by strongly folded and dipping rocks; the larger streams follow the outcrops of less resistant rocks and tributaries enter at right angles across the dip of the strata (Lobeck, 1939, p. 175). All of the streams in the north half of the area show the influence of geologic control, their drainage styles reflecting the varied outcrop pattern. the different lithologies present, and the geologic structure.

In the south half of the area, the dendritic drainage style is indicative of streams that developed independently of the underlying geology (LaForge and others, 1925; Staheli, 1976). According to Staheli (1976, p. 451), dendritic drainage, in which streams run in all directions like the branches of a tree, propelly was established on some preexisting surface and later superimposed on the underlying crystalline rocks. Such streams are said to be superimposed when they acquire a course on nearly flat-lying material that covered the rocks beneath. Streams flowing on the veneer of material that covers the bedrock are superimposed above the concealed rocks. When rejuvenated by uplift, they become incised and develop courses without regard to the structure or lithology of the underlying rocks. Eventually, the cover material may be entirely removed and then only the physiographic pattern of the streams will suggest their having been let down from a superimposed position (Lobeck, 1939, p. 173).

According to Staheli (1976, p. 451), to explain the different drainage styles in regions underlain by similar rocks and

gneisses. Dark-gray to black flinty crush rock occurs in association with more mafic rocks, such as diabase.

The sheared country rock generally shows little or no replacement mineralization. Shearing of biotite-rich gneisses commonly results in a rock having a schistose texture containing a large proportion of platy minerals (muscovite or biotite). Sheared amphibolites retain the same mineralogy but undergo abrupt textural changes that produce the previously mentioned diamond-shaped fragments. Schist that has been sheared may weather into small disk-shaped pieces and is referred to as button schist."

HIGH-YIELDING WELLS

In this report, the term "high-yielding wells" refers to ones that supply a minimum of 20 gal/min, except in the belt extending from College Park through Atlanta, where the minimum yield is 50 gal/min. The maximum yields of the wells range from 35 to 470 gal/min, the wide range in yields resulting from differences in rock type, geologic structure, and topographic settings. The distribution of high-yielding wells in the report area is shown on plate 1.

Data on more than 1,500 high-yielding wells in the GAR were obtained from files of the U.S. Geological Survey, local drilling contractors, and ground-water hydrologists, and from previous publications. The location of each high-yielding well used in this report was confirmed by field checking and plotted on topographic maps for determination of latitude, longitude, and topographic setting. Construction and yield data were confirmed, where possible, by interviews with well owners. About 400 reportedly high-yielding wells were excluded from use in this report because the wells could not be located within the alloted time or significant questions remained about the accuracy of yield or construction data.

SELECTING SITES FOR HIGH-YIELDING WELLS

Selecting sites for high-yielding wells requires a knowledge of the character of the underlying bedrock, the structural and stratigraphic features present, and the relation of these features to the topography and drainage. This knowledge generally is obtained by a foot traverse of the area, during which structural and stratigraphic features such as fault zones, contact zones, zones of fracture concentration, the dip and strike of foliation and layering, the strike and plunge of fold axes; and other clues to localized increases in bedrock permeability are plotted on a topographic map. Locating observed features on a topographic map is a good way to understand their relation to the topography and drainage.

The appropriate method(s) to use for selecting high-yielding well sites depends on (1) the quantity of water needed, (2) the topography and the drainage style of the area, (3) the rock type, (4) the types and character of structural and stratigraphic features present in the rock, and (5) imposed constraints, such as being limited to a small area or to specific pieces of property, or the requirement that the sites be near pipelines or other facilities. Site selection methods that can be applied to most combinations of geology, topography, and drainage are presented below.

The reader also should understand that the successful siting of high-yielding wells in the GAR is not particularly good. Drilling of multiple wells to obtain required yields is common. Also, it should be recognized that some sites, for practical purposes, are virtually "barren" of ground water.

Topography and Soil Thickness

Because the yields of individual wells in the GAR vary greatly within short distances, estimating the potential yield of prospective sites can be very difficult. Most methods for selecting well sites require a knowledge of geology and structure, which restricts their use primarily to hydrologists. A method was developed by LeGrand (1967) that utilizes only topography and soil thickness, and is suitable for use by nonhydrologists. The method provides a means for estimating, on a percentage basis, the chances of obtaining certain yields from prospective well sites in a variety of settings.

The LeGrand Method

"Although many factors determine the yield of a well, two ground conditions when used together serve as a good index for rating a well site. These conditions are topography and soil thickness. ratings are based on the following statement: High-yielding wells are common where thick residual soils and relatively low topographic areas are combined, and low-yielding wells are common where thin soils and hilltops are combined. By comparing conditions of a site according to the topographic and soil conditions one gets a relative rating value. For example, the following topographic conditions are assigned point values:

Points	Topography
0	Steep ridge top
2	Upland steep slope
4	Pronounced rounded upland
5	Midpoint ridge slope
7	Gentle upland slope
8	Broad flat upland
9	Lower part of upland slope
12	Valley bottom or flood plain
15	Draw in narrow catchment area
18	Draw in large catchment area

"Figure 21 shows values for certain topographic conditions. Figure 22 shows rating values for soil thickness. The soil zone in this report includes the normal soils and also the relatively soft or weathered rock. The topographic and soil conditions are separately rated, and the points for each are added to get the total points which may be used in table 5 to rate a site.

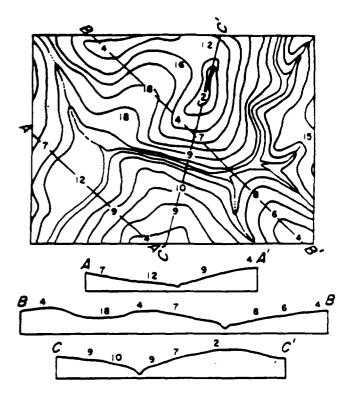


Figure 21. Topographic map and profiles of ground surface showing rating in points for various topographic positions.
(LeGrand, 1967).

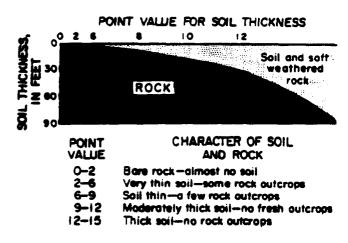


Figure 22. Rating in points for variou conditions of soil thicknes (LeGrand, 1967).

Table 5.—Use of numerical rating of well site to estimate the percent chance of success of a well (LeGrand, 1967)

[Data are based on maximum depth of 300 feet or maximum drawdown of water level of about 200 feet. No interference is assumed. Numberical rating is obtained by adding rating in points for topography and soil thickness; gpm, gallons per minute.]

Total points of a	Average yield	to yield at least-									
site	(gpm)	3 gpm	10 gpm	25 gpm	50 gpm	75 gpm					
5	2	48	18	6	2						
6	2 3 3	50	20	7 8	3	-					
7	3	55	25	8	3	-					
8	4	5 5	30	11	3						
9	5	60	35	12	4	-					
10	6 7	65	40	15	5	_					
11		70	43	19	7						
12	9	73	46	22	10	_					
13	11	7 7	50	26	12						
14	12	80	52	30	14						
15	14	83	54	33	16	_					
16	16	85	57	36	18	_					
17	17	86	60	40	20	12					
18	20	87	63	45	24	15					
19	23	88	66	50	25	18					
20	26	89	70	52	27	20					
21	28	90	72	54	30	22					
22	31	91	74	56	35	24					
23	34	92	76	58	38	26					
24	37	92	78	60	40	29					
25	39	93	80	62	43	32					
26	41	93	81	64	46	36					
27	43	94	82	66	48	40					
28	45	95	83	68	50	42					
29	46	95	84	71	53	44					
30	50	96	87	73	56	47					
30+	50	97	91	75	60	50					

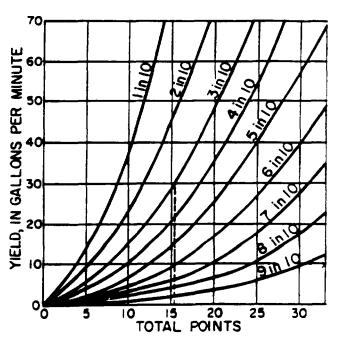
"Using two wells sites, A and B as examples, we can evaluate each as to the potential yield of a well. Site A, a pronounced rounded upland (4-point rating for topography in fig. 21) having a relatively thin soil (6-point rating for soil characteristics in fig. 22), has a total of 10 points. In table 5 the average yield for site A is 6 gal/min. This site has a 65-percent chance of yielding 3 gal/min and a 40-percent chance of yielding 10 gal/min. Site B, a draw or slight sag in topography (18-point rating) having a moderately thick soil (12-point rating), has a total of 30 points, an average yield of 50 gal/min, and a 73percent chance of yielding 25 gal/min. Referring to figure 23, we see that the 10-point site has less than I chance in 10 of yielding 40 gal/min, whereas the 30-point site has better than an even chance of yielding 40 gal/min.

"Some topographic conditions of the region and a few topographic ratings are shown in figure 24. Wells located on concave slopes are commonly more productive than wells on convex slopes or straight slopes. Broad but slightly concave slopes near saddles in gently rolling upland areas are especially good sites for potentially high-yielding wells. On the other hand, steep V-shaped valleys of the gully type may not be especially good sites, and they should be avoided if surface drainage near the well is so poor that contamination is possible.

"More difficulty is likely to occur in rating character of soil and rock than in rating topography. Everyone should be able to determine by observation if the soil is thin and if the soil is fairly thick (more than 10 soil and rock points), but the intermediate ratings are difficult to make. If the observer is unsure of the soil and rock rating above the 6-point (thin-soil) value, he may choose a 10-point value for the site with assurance that he is fairly correct. White quartz or flint is not considered a true rock in this report, because it persists in the soil zone; a quartz vein, in many cases, is considered to be a slightly favorable indication of a good well site.

"The numerical rating system is no intended to be precise. One person may rate a particular site at 15 points whereas another person may rate it at points; such a small difference in ratio would not be misleading. Almost everyone's rating will be within 5 points an average rating for a site."

Limitations.—LeGrand's method is especially well suited to the north half the report area, where the topography as geology are closely related and the topographic setting and soil thickness as indicative of bedrock permeability. can be applied there in every type c topographic setting, from the smalles draws and drainages to the larger streavalleys. The use of LeGrand's methoshould bring about a substantial increasin the percentage of high-yielding wells



EXAMPLE: A site with 16 points has 3 chances in 10 of yielding at least 30 gallons per minute and 6 chances in 10 of yielding 10 gallons per minute.

Figure 23. Probability of getting certain yield from a well at different sites having various total-point ratings. (LeGrand, 1967).



From LeGrand, 1967

Figure 24. Countryside showing approximate ratings for topography. Numbers refer to figure 22.

In the south half of the area, the method probably will be most reliable in the uppermost headwaters areas of streams and along draws and drainages that flow down ridge slopes. In these areas, high-yielding wells commonly result when a dry hole on a hilltop or ridge crest is abandoned in favor of a site in the nearest draw or saddle, or downslope midway between the hilltop and the draw. The larger superimposed streams and drainages are not necessarily located over zones of bedrock weakness and, therefore, the method may not be applicable in those areas.

Contact Zones Between Rock Units of Contrasting Character

Potentially permeable contact zones between rock units of contrasting character occur in the GAR wherever Units B, D, and F are in contact with Units A, C, and E and in some areas with Unit G. Some contact zones between Unit C and Units E, H, and G also may be permeable. Most contacts between these units are shown on

REFERENCE 16

REFERENCE 16								
HALLIBURTON NUS ENVIRONMENTAL CORPORA	TELECON NOTE							
CONTROL NO.	TIME: 1330							
DISTRIBUTION:		······································						
BETWEEN: Gilbert Peeples	OF: Director, Clayton County Water Department	PHONE: (404) 474-7128						
AND: Suzanne Quillian	Water Department							
surface water sources. The city of I The Clayton County water system sone on the Flint River supply 9,000 and one on Big Cotton Indian Cree The city of Atlanta supplies most o	Clayton, Dekalb, and Fulton counties in Forest Park purchases its water from the supplies 46,000 connections from four into ,000 gallons per day. The other two inta k, supply 20,000,000 gallons per day (both the water for the study area. Its water atlanta withdraws approximately 180,000 for the water withdraws approximately 180,000 for the study area.	takes. An intake on Shoal Creek and okes, one on Little Cotton Indian Creek th intakes are located in Henry County).						

REFERENCE 17									
HALLIBURTON NUS ENVIRONMENTAL CORPORATI	TELECON NOTE								
CONTROL NO.	TIME: 1150								
DISTRIBUTION:	<u> </u>	<u></u>							
Bagcraft Corporation									
BETWEEN: Russell Morehead	OF: Clayton County Public Works Dept.	PHONE: (404) 473-3900							
AND: Suzanne Quillian									
DISCUSSION:	······································								
the land to the nearest surface water by the Clayton County Dept. of Public the storm drainage system does not w the last several years, and flooding of blocked or caved in. Mr. Morehead fu	drains in the Mirror Lake Road/Old Dixie body. However, studies are being cond : Works and the city of Forest Park. The vork as explained above. The storm drafthe area occurs in times of heavy rains. Lurther explained that much of the runotere is nowhere overland for it to go, du	lucted on the storm drains in the area studies are being conducted because ins have had backup problems during It is suspected that the drains are ff from the industrial area would							

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

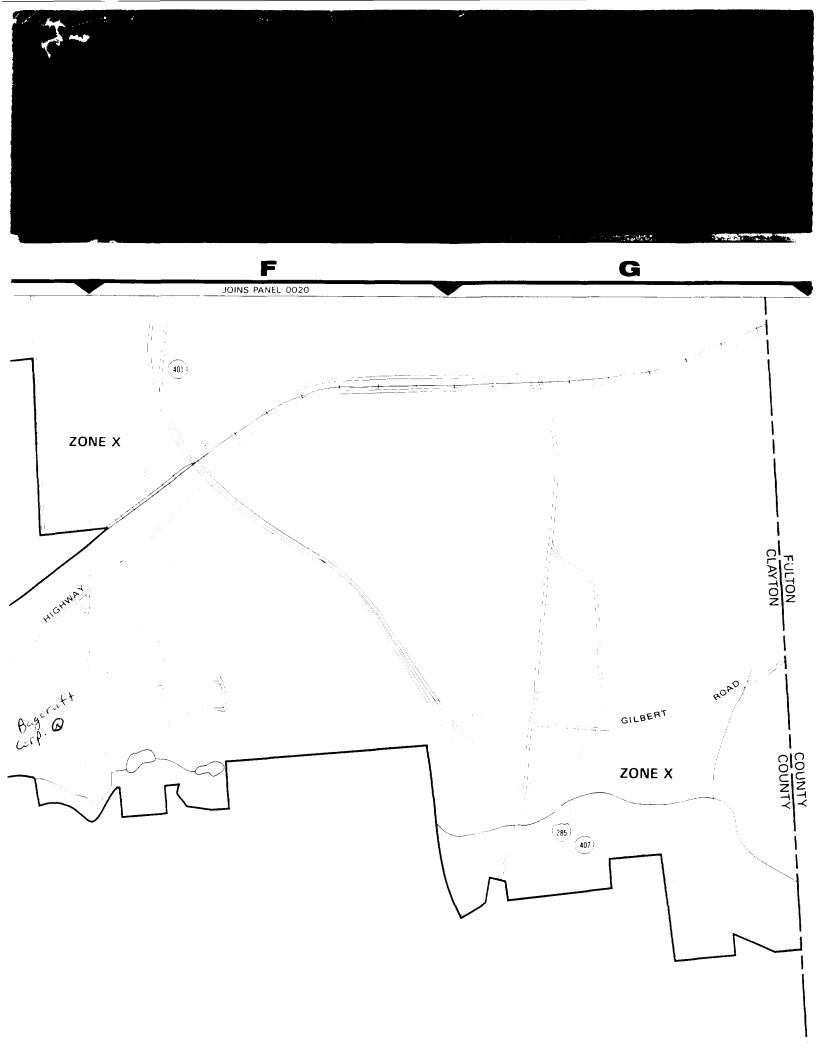
CLAYTON COUNTY, GEORGIA

(UNINCORPORATED AREAS)

PANEL 60 OF 60

COMMUNITY—PANEL NUMBER: 130041 0060 C MAP REVISED: NOVEMBER 6, 1991

Federal Emergency Management Agency



REFERENCE 19

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6	0	2/3	U	413	3625	6510	10821
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** Note: This total reflects the charges for this process only, subprocesses created during this session are accounted for separately

2

0.4656

0.4656

\$

(Seconds)

Enter selection:

CPU TIME

TOTAL FOR THIS SESSION

REFERENCE 20

Codes for Wetlands and Heritage Database

I. Precision Codes

Code	Description	
SC	Seconds Confirmed	Accuracy of locality is mappable within a three-second radius (roughly the area covered by the dot). The site has been visited and the element is known to occur precisely there
S	Seconds	Accuracy of locality is mappable within a three-second radius (roughly the area covered by the dot). The place as described in source(s) is precisely mappable, whether or not the element is known to occur precisely there.
M	Minute	Accurate within a one-minute radius (approximately 2km or 1.5 mi. from the centerpoint of the dot).
G	General	Quad or place name precision only (precision within about 8 km or 5 mi.).
Ü	Unmappable	Cannot be mapped due to incomplete or inaccurate information.

II. Global Element Ranking Codes

Code	Description
G1	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to extinction.
G2	Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to extinction throughout its range.
G3	Either very rare and local throughout its range or found locally (even aboundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.
G4	Apparently secure globally, though it may be quite rare in parts of its range, expecially at the periphery.
G5	Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
GH	Of historical occurrence throughout its range, i.e., formerly part of the established biota, with the expectation that it may be rediscovered (e.g., Bachman's Warbler).
GU	Possibly in peril range-wide but status uncertain; need more information. NOTE: This rank should be used sparingly. Whenever possible, assign the most likely rank and add a question mark (e.g., G2?) to express uncertainty, or use a range (e.g., G2G3) to delineate the limits (range) of uncertainty.
GX	Believed to be extinct throughout range (e.g., Passenger Pigeon) with virtually no likelihood that it will be rediscovered.

III. State Element Ranking Codes

Code Description

- Critically imperiled in state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to
- Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it expecially vulnerable to extirpation from the state.
- Rare or uncommon in state (on the order of 21 to 100 occurrences).
- Apparently secure in state, with many occurrences.
- Demonstrably secure in state, and essentially ineradicable under present conditions.
- Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very greate intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and viceversa.
- Of historical occurrence in the state, perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an element would become SH without such a 20-year delay if the only known occurrences in a state were destroyed or if it had been extensively and unsuccessfully looked for. Upon verification of an extant occurrence, SH-ranked elements would typically receive an S1 rank. The SH rank should be reserved for elements for which some effort has been made to relocate occurrences, rather thatn simply ranking all elements not known from verified extant occurrences with this rank.

III. State Element Ranking Codes (cont.)

Code Description

SN

usually migratory and occurring, typically nonbreeding species for which no significant or effective habitat conservation measures can be taken in the state; this category includes migratory birds (concentration sites for migratory birds are grouped in the "other" category and ranked accordingly - bats, sea turtles, and cetaceans which do not breed in a given state but pass through twice a year or may remain in the winter (or, in a few cases, the summer); included also are certain lepidoptera which regularly migrate to a state where they reproduce, but then completely die out every year Species in this categorty are so with no return migration. widely and unreliably distributed during migration or in winter that no small set of sites could be set aside with the hope of significantly furthering globally-ranked species (such as the whooping crane or some seal species) bald eagle, regularly spend some portion of the year at definite localities (and therefore have a valid conservation need in the state) should NOT be ranked SN, but rahter S1, S2, etc. This rank "lost causes", which in someone's opinion is also not for be saved. The reasons for assigning the SN rank may not be apparent from the fact pattern on the Element State since there may be low numbers, Ranking Form, Therefore, the reasons must be carefully set out in SREASONS under SRANK.

SR

Reported from the state, but without persuasive documentation whice would provide a basis for either accepting or rejecting (e.g., misidentified specimen) the report. Some of these are very recent discoveries for which the program hasn't yet received first-hand information; others are old, obscure reports that are hard to dismiss because the habitat is now destroyed.

SRF

Reported falsely (in error) from state but this error persisting in the literature.

SU

Possibly in peril in state but status uncertain; need more information. NOTE: This rank should be used sparingly. Whenever possible, assign the most likely rank and add a question mark (e.g., G2?) to express uncertainty, or use a range (e.g., G2G3) to delineate the limits (range) of uncertainty.

SX

Apparently extirpated from state.

Georgia Department of Natural Resources DISCLAIMER

Dear Database User:

Please keep in mind the limitations of our database. The sites in question may contain rare species or important natural areas of which we are unaware.

The data collected by the Freshwater Wetlands and Heritage Inventory comes from a variety of sources, including museum and herbarium records, literature, and reports from individuals and organizations, as well as field surveys by our staff biologists. In most cases the information is not the result of an on-site survey by our staff. Many areas in Georgia have never been surveyed thoroughly. Therefore, the Freshwater Wetlands and Heritage Inventory can only occasionally provide definitive information on the presence or absence of rare species on a given site.

Our files are updated constantly as new information is received. Thus, information provided by our program represents the existing data in our files at the time of the request and should not be considered a final statement on the species under consideration.

Sincerely,

Freshwater Wetlands and Heritage Inventory

GEORGIA DEPARTMENT OF NATURAL RESOURCES Freshwater Wetlands & Heritage Inventory Database - July, 1990

For SOUTHWEST ATLANTA QUAD

Scientific Name;	Last	Precision	Global	State	County;
Common Name	Observed		Rank	Rank	Quad
AIMOPHILA AESTIVALIS BACHMAN'S SPARROW	1903 - 05 - 10	М	G3	S 3	GAFULT SOUTHWEST ATLANTA

^{*} There were no listings for the other goads (Southeast Atlanta, Jonesboro, and Riverdale).

REFERENCE 21

ENDANGERED AND THREATENED SPECIES

OF THE

SOUTHEASTERN UNITED STATES

(THE RED BOOK)

Prepared by:

U.S. Fish and Wildlife Service Southeast Region Atlanta, Georgia

January 1992

Availability Unlimited
For Sale by Superintendent of Documents
Post Office Box 371954
Pittsburgh, PA 1525O-7954

Stock Order Number: 924-OO3-OOOO-6

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

<u>Mammals</u>	General Distribution
Bat, gray (Myotis grisescens) - E Bat, Indiana (Myptis sodalis) - E Manatee, West Indian (Trichechus manatus) - E Panther, Florida (Felis concolor coryi) - E Whale, finback (Balaenoptera physalus) - E Whale, humpback (Megaptera novaeangliae) - E Whale, right (Eubalaena glacialis) - E Whale, sei (Balaenoptera borealis) - E Whale, sperm (Physeter catodon) - E	Northwest, West Extreme Northwest Coastal waters Entire State Coastal waters Coastal waters Coastal waters Coastal waters Coastal waters Coastal waters
<u>Birds</u>	
Eagle, bald (<u>Haliaeetus leucocephalus</u>) - E Falcon, American peregrine	Entire State
(<u>Falco</u> peregrinus <u>anatum</u>) - E Falcon, Arctic peregrine	North
(<u>Falco peregrinus tundrius</u>) - T Plover, piping (<u>Charadrius melodus</u>) - T Stork, wood (<u>Mycteria americana</u>) - E Warbler, Bachman's (<u>Vermivora bachmanii</u>) - E Warbler, Kirtland's (<u>Dendroica kirtlandii</u>) - E Woodpecker, ivory-billed	Coast, Northwest Coast Southeastern swamps Entire State Coast
(<u>Campephilus principalis</u>) - E Woodpecker, red-cockaded	South, Southwest
(<u>Picoides</u> [= <u>Dendrocopos</u>] <u>borealis</u>) - E	Entire State
<u>Reptiles</u>	
Alligator, American (<u>Alligator mississippiensis</u>) - T(S/A)* Snake, eastern indigo (<u>Drymarchon corais couperi</u>) - T	Coastal plain Southeast

^{*}Alligators are biologically neither endangered nor threatened. For law enforcement purposes they are classified as "Threatened due to Similarity of Appearance." Alligator hunting is regulated in accordance with State law.

GEORGIA (cont'd)

General Distribution

Turtle, Kemp's (Atlantic) ridley
(Lepidochelys kempii) - E
Turtle, green
(Chelonia mydas) - T
Turtle, hawksbill
(Eretmochelys imbricata) - E
Turtle, leatherback
(Dermochelys coriacea) - E

Coastal waters
Coastal waters

<u>etmochelys imbricata</u>) - E Coastal waters e, leatherback

Coastal waters

Turtle, loggerhead (Caretta caretta) - T

Coastal waters

<u>Fishes</u>

Darter, amber (Percina antesella) - E,CH

Darter, goldline (Percina aurolineata - T

Darter, snail (Percina tanasi) - T

Logperch, Conasauga (<u>Percina jenkinsi</u>) - E,CH

Shiner, blue (Cyprinella caerulea) - T

Conasauga R., Murray County Upper Coosa River System

S. Chickamauga Cr.,
Catoosa County
Conasauga R.,
Murray County
Conasauga and Coosawattee
Rivers, Holly, Rock, Perry,
and Turniptown Creeks

Sturgeon, shortnose
(Acipenser brevirostrum) - E

Coastal rivers

Plants

 $\underline{Amphianthus} \ \ \underline{pusillus} \ \ (\mbox{little amphianthus}) \ \ - \ \ T$

Baptisia arachnifera (hairy rattleweed) - E

Echinacea laevigata (smooth coneflower) - E Helonias bullata (Swamp pink) - T Isoetes melanospora (black-spored quillwort) - E

<u>Isoetes</u> <u>tegetiformans</u> (mat-forming quillwort) - E

<u>Isotria medeoloides</u> (small whorled pogonia) - E
<u>Lindera melissifolia</u> (pondberry) - E
<u>Marshallia mohrii</u> (Mohr's
Barbara's-buttons) - T
<u>Oxypolis Canbyi</u> (Canby's dropwort) - E

Piedmont Region (17 Counties) Wayne, Brantley Counties Stephens County Union County

Dekalb, Rockdale, Gwinnett Counties

Columbia, Hancock, Greene, Putnam Counties

Rabun County Wheeler County

Floyd County Burke, Lee, Sumter Counties

State Lists 10/8/92

GEORGIA (cont'd)

<u>Ptilimnium nodosum</u> (harperella) - E <u>Rhus michauxii</u> (Michaux's sumac) - E

<u>Sagittaria</u> <u>secundifolia</u> (Kral's waterplantain) - T

Silena polypetala (fringed campion) - E

<u>Sarracenia oreophila</u> (green pitcher plant) - E <u>Scutellaria montana</u> (large-flowered skullcap) - E

<u>Schwalbea americana</u> (American chaffseed) - E <u>Spiraea virginiana</u> (Virginia spiraea) - T <u>Torreya taxifolia</u> (Florida torreya) - E <u>Trillium persistens</u> (persistent trillium) - E

<u>Trillium reliquum</u> (relict trillium) - E

<u>Xyris Tennesseensis</u> (Tennessee yellow-eyed grass) - E

General Distribution

Greene County Elbert County

Chattooga County

Bibb, Crawford, Taylor, Talbot Counties Towns County

Floyd, Gordon, Walker
Counties
Baker, Dougherty Counties
Walker, Dade Counties
Decatur County
Tallulah-Tugaloo River
system, Rabun and Habersham
Counties
Clay, Columbia, Early,
Talbot, Lee Counties

Bartow County

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1	ing)	- 4
	Jan B	•

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION	SITE NUMBER (to be a	
\odot	eigned by Ha)	

IV	6A 00000 3000
	01,000000000

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460. I. SITE IDENTIFICATION A. SITE NAME B. STREET:(or other identifier) rac C. CITY G. OWNER/OPERATOR (If known) H. TYPE OF OWNERSHIP 4. MUNICIPAL S PRIVATE 6 UNKNOWN 1. FEDERAL 2. STATE 3. COUNTY J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) K. DATE IDENTIFIED (mo., day, & yr.) con L. PRINCIPAL STATE CONTACT 1. NAME 2. TELEPHONE NUMBER II. PRELIMINARY ASSESSMENT (complete this section last) A. APPARENT SERIOUSNESS OF PROBLEM 2. MEDIUM 3. LOW 1. HIGH 4 NONE 5. UNKNOW: B. RECOMMENDATION 1. NO ACTION NEEDED (no hezerd) 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: 4. SITE INSPECTION NEEDED (low priority) C. PREPARER INFORMATIO III. SITE INFORMATION SITE STATUS 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infre-3. OTHER (specify):
(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.) 2. INACTIVE (Those sites which no longer receive wastes.) quently.) B. IS GENERATOR ON SITE? ☐ 1. NO 2. YES (epocify generator's four-digit SIC Code): C. AREA OF SITE (In acres) D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 2. LONGITUDE (deg.-min.-sec.) 1. LATITUDE (deg.-min.-eec.) E. ARE THERE BUILDINGS ON THE SITE? 2. YES (epecity): ☐ 1. NO

L	IV. CHARACTERIZATION OF SITE ACTIVITY														
Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.															
. × .	A. TRANSPOR	TEI	. T	ž		в. :	STOPER	×	C. TREATER	?		· × ·		. D	ISPOSER
	1. RAIL		,		1. PILE				1. FILTRATION				. LANDFIL		
	2. SHIP			•	2. SURFA	CE	IMPOUNDMENT		2. INCINERATION				. LANDFA	RM	
	3. BARGE			X	3. DRUM	\$			3. VOLUME REDUCTI	ON			, OPEN DI	JMF	>
L	4. TRUCK			V	4. TANK.	A 8	OVE GROUND		4. RECYCLING/RECO	VE	₹ ∀		. SURFAC	E II	MPOUNDMENT
	5. PIPELINE			Ľ	5. TANK.	BE	LOW GROUND		5. CHEM./PHYS. TRE	ATA	MENT		. MIDNIGH	Τ (DUMPING
L	6. OTHER (specify):				6. OTHE	R (S	pecify):		6. BIOLOGICAL TREA	TM	ENT		. INCINER	AT	10N
			1						7. WASTE OIL REPRO	C E S	SING		. UNDERG	RO	UND INJECTION
									8. SOLVENT RECOVE 9. OTHER (specily):	RY			3. OTHER (spe	ecify):
	Storage area in back on left hand side; runolf from property down to RR tracks														
L							V. WASTE RELAT	EC	INFORMATION						
	WASTE TYPE	<u>.</u>	LIQUID		3	. sc	DLID4. 9	L U	DGE5. G	A S					
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`		٠.			٠ _ ٠										
٦	10. OTHER (specify	יוש													
	WASTE CATEGORIE			-						-				_	
	. Are records of wast		vailable	,	Specify ite	ms	such as manifests, i	nve	ntories, etc. below.						
<u> </u>	Estimate the amo	unt	(specify	7 17	nit of mea	9511	re) of waste by cat	e a n	ry; mark 'X' to indic	ate	which	1 W A	stes are n	res	ent.
-	a. SLUDGE	Γ	b. (<u> </u>	c. SOLVENTS	Ť	d. CHEMICALS	T					I. OTHER
ΑN	OUNT	АМ	OUNT			A٨	OUNT	_	MOUNT	e. SOLIDS		AN	OUNT		
								1							
Uh	NIT OF MEASURE	UN	ITOFM	EΑ	SURE	UN	TOF MEASURE	V	NIT OF MEASURE	U N	IT OF	ME	ASURE	Š	IT OF MEASURE
.x.	(1) PAINT, PIGMENTS	'x'	(1) OIL Y		s	·×	(1) HALOGENATED SOLVENTS	;	(1) A CIDS	'×'	(1) FL	Y A S	н	'x'	1) LABORATORY PHARMACEUT.
	(2) METALS SLUDGES	-	(2) O T H	ER	(specify):		(2) NON-HALOGNTE SOLVENTS	1	(2) PICKLING LIQUORS		(2: AS	BES	тоѕ	L	(21HOSPITAL
	(E) W						(3) OTHER(specify)		(3) CAUSTICS		(3) MII MII		IG/ AILINGS		(3) RADIOACTIVE
	(4) ALUMINUM \$LUDGE	ļ ļ							(4) PESTICIDES		(4) FE SM	RRC	. WASTES		(4) MUNICIPAL
	(5) OTHER(specify):							2	(5) DYES/INKS	Ц			ERROUS . WASTES	-	(5) OTHER(specify):
					:				(6) CYANIDE	H	(6) O T	HER	(specity):		
								L	(7) PHENOLS						
								(8) HALOGENS							
					ļ				(9) PCB						
									(10) METALS						
	•								alcohols, ac	to	ite	0			

EPA Form T207012 (10-79)

Continued From Front

PAGE 2 OF 4

Continue On Page 3

From Page 2								
	<u>V</u> .		ED INFORMATIO					
inks altohols								
4. ADDITIONAL COMMENTS OR NA	RRATIVE DE	SCRIPTION OF	F SITUATION KNO	OWN OR REPORTED TO EXIST AT THE SITE.				
		VI. HAZ	ARD DESCRIPT	ION				
A. TYPE OF HAZARD	B. POTEN- TIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo.,day,yr.)	E. REMARKS				
1. NO HAZARD								
2. HUMAN HEALTH								
3. NON-WORKER INJURY/EXPOSURE								
4. WORKER INJURY								
6 OF WATER SUPPLY								
6. CONTAMINATION OF FOOD CHAIN								
7. CONTAMINATION OF GROUND WATER								
8. CONTAMINATION OF SURFACE WATER								
9. DAMAGE TO FLORA/FAUNA								
10. FISH KILL					·			
11. CONTAMINATION OF AIR								
12. NOTICEABLE ODORS								
13. CONTAMINATION OF SOIL		X						
14. PROPERTY DAMAGE								
15. FIRE OR EXPLOSION								
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS		X						
17. SEWER, STORM DRAIN PROBLEMS								
18. EROSION PROBLEMS								
19. INADEQUATE SECURITY								
20. INCOMPATIBLE WASTES								
		r 						

21. MIDNIGHT DUMPING 22. OTHER (specify):

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information on the first page of this form.

PAGE 4 OF 4

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II)

9	DΛ
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POTENTIAL HAZARDOUS WASTE SITE LOG

SITE NUMBER

A000003000

			1840000	0000
NOTE: The initial identification of a potential s ation that an actual health or environmen Waste Site Enforcement and Response Sy	ital threat ex	ists. All identified sites will be as	ssessed under the EPA's	
SITE NAME O C AL	^			
13ag Craft	(v	P		
CITY		STATE	ZIP CODE	
Forest Park		<u> </u>		
Dumping of inks, al renorth from property	eohols · tity	en complaint	on to grown	d - Some
	DATE OF			DATE
ITEM	DETERMIN-	RESPONSIBLE ORGANIZATION	PERSON MAKING	ENTERED ON LOG
	COMPLE- TION	OR INDIVIDUAL (EPA, State, Contractor, Other)	ENTRY TO LOG FORM	(mo,day,yr)
1. IDENTIFICATION OF POTENTIAL PROBLEM	3/26/80	EPA, Ferrazzuol	Ferrazzuol	3/26/80
2. PRELIMINARY ASSESSMENT	4/15/80	EPA, Fenazzuolo	Ferancelo	#/15/80
APPARENT SERIOUSNESS OF PROBLEM:	П нісн	MEDIUM LOW NON	E UNKNOWN	,
3. SITE INSPECTION	4/15/80	EPA, Fenaszailo	Fenassuots	4/13/80
4. EPA TENTATIVE DISPOSITION (check appropriate item(e) below)				
a. NO ACTION NEEDED				
b. INVESTIGATIVE ACTION NEEDED				
c. REMEDIAL ACTION NEEDED				
d. ENFORCEMENT ACTION NEEDED				
5. Check appropriate item(a) below)				
a. NO ACTION NEEDED				
b. REMEDIAL ACTION NEEDED				
c. REMEDIAL ACTION NEEDED BUT,				
d. ENFORCEMENT ACTION NEEDED				
(1) CASE DEVELOPMENT PLAN PREPARED	***			
(2) ENFORCEMENT CASE FILED OR ADMINISTRATIVE ORDER ISSUED				
6. STRATEGY COMPLETED			·	
EDA P. T2070-1 (10.70)				'

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\$	EF	PA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT

REGION	SITEN	UMBER	(to b	e essign
I	CA	0000	203	000

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Tack Force (EN-335); 401 M St., SW; Washington, DC 20460.

tection Agency; Site Tracking Syst.	em; Hazardous Waste Enforc	ement Tack Fo	rce (EN-335); 401	M St., SW; Was	hington, DC 20460.
	I, SITE IDF	ENTIFICATION			
A. SITE NAME		B. STREET (or other identifier)		
BAG CRAFT CO	<u> 2KP</u>	D. STATE	Royal Drug	TF. COUNTY NO	AME
FOREST PARK		GA	30050	Clayto	
G. SITE OPERATOR INFORMATION				1 2. TELEPHON	
1. NAME			,	2. 16.6.	B
3. STREET				8. STATE	6. ZIP CODE
3. 317000 ;					704 50
H. REALTY OWNER INFORMATION (in	I different from operator of site)	,			
1. NAME			,	2. TELEPHON	NE NUMBER
3. CITY				4. STATE	S. ZIP CODE
			1		0.20
1. SITE DESCRIPTION & molust	rial glant wh	ich my	gs. van	tous y	Thes of Baco
	ruce U	U	/ σ	· · · · · · · · · · · · · · · · · · ·) <u>n d.</u>
J. TYPE OF OWNERSHIP			~-1		
1. FEDERAL 2. STAT	TE 3. COUNTY	4. MUNICIPAL	L S. PRIVA	TE	·
	II. TENTATIVE DISPOSITI				
A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mq., day, & yt.)	<u> </u>		•	NO+	
4/20/40	☐ 1. HIGH *	, 2. MEDIUM	3. 20	4. NON	E
C. PREPARER INFORMATION					
1. NAME David Brentz	l	· ·	ONE NUMBER	3. DATE (mo.,	
vww			1-3016	4	15/80
WEDGETOR INFORMA		ON INFORMAT	ION		
A. PRINCIPAL INSPECTOR INFORMA	•	2. TITLE	_		
Richard Juna	musla		m Engl		
3. ORGANIZATION	75 m	L			NE NO. (area code & no.)
EPA				18/	- 3016
B. INSPECTION PARTICIPANTS				T	
1. NAME	2. ORG	GANIZATION		3. TEL	LEPHONE NO.
David Brentzel	EPA (ch	em Engr	Trainee)	881	- 3016
Richard Ferranula	EPA (C)	land Engl	11	881 -	1174
13 Comments	4 11 4 2 24 0	Mir. Cal	'		
	HYHMO, KMB		·	<u> </u>	
C. SITE REPRESENTATIVES INTERV					
1. NAME	2. TITLE & TELEPHONE N	10.	*	. ADDRESS	
1					
	<u> </u>				
	1				
	 				
	1				
					
1	1	İ			

Continued From Front						/	
		ın.	INSPE	CTION INFORMATION (co	ontinued)		
D. GENERATOR INFORMATIO	N (source	ces of weste)					
1. NAME	2. T	ELEPHONE	10.	3. ADD	9 E 3 \$	4. W	ASTE TYPE GENERATED
							·
	1						
				<u> </u>			
	ļ					1	
E. TRANSPORTER/HAULER	NFORM	ATION					
1. NAME		ELEPHONE N	ю.	a. ADDI	RESS	4.WA	STE TYPE TRANSPORTED
	t			ł			
	Ì			l			
	1						
	i						
F. IF WASTE IS PROCESSED	ON PIZE	AND ALSO		D TO OTHER SITES IDENT	TEV OFF-SI	F FACULTIES US	ED FOR DISPOSAL
1. NAME		ELEPHONE N		10 0111EK 31123, 10EK 1		DDRESS	.b r ok bist oske.
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	 •••••	EEEFHONE					
	1						
	 	···-				····	
	 						
G. DATE OF INSPECTION	H. 711	ME OF INSPE	CTION	I. ACCESS GAINED BY: (cr	edentiala mu	st be shown in all co	
(mo., day, & yr.),//c/dG	9	:30 6	1/h	1. PERMISSION		ARRANT	·
J. WEATHER (describe)		- 10	<u> </u>	-			talono Dia
Partly Clouds	, co	ol t	am	o. in wasser	40 0	which ?	1 Com Com 1
raney - wary	/		- (/		-		77 278 WAN
		A - 1 1		SAMPLING INFORMATIO		in all laboration V	'DA lab academates
A. Mark 'X' for the types of etc. and estimate when the					ent e.g., re	gional lab, other E	PA 180, Contractor,
		2. SAMPLE	Γ				4. DATE
1.SAMPLE TYPE		TAKEN	İ	3.SAMPL	E SENT TO:		RESULTS _
<u> </u>		(merk 'X')	├	······································			AVAILABLE
e. GROUNDWATER		l					
			 				
b. SURFACE WATER		[
						·	
C. WASTE		1					
<u> </u>			 -				
d. AIR		l					
		<u> </u>					
. RUNOFF			l				
[ļ ——	, , , , , , , , , , , , , , , , , , ,			
£ SPILL							
				·	,		
g. 301L			l				
6		<u> </u>	ļ				
h. VEGETATION]					Ì
						. <u> </u>	
I. OTHER(AMARILY)		ľ	[
		<u></u>	Щ.				
B. FIELD MEASUREMENTS TA	KEN (.4., radioacti	rity, e.	rplosivity, PH, etc.)			
1. TYPE		2. LOC	TION	OF MEASUREMENTS		3. RESUL	, TS
					<u>l</u> .		
					I	······································	
		Į			1		

Photos- milky while substance

12 Blue ink contaminant soil- stains

	IV. SAMPLING INFOR		, , , , , , , , , , , , , , , , , , , ,
C. PHOTOS 1. TYPE OF PHOTOS	2. PHOTOS IN	CUSTODY OF:	Othyl acetati- about 40 Barrels of side of Volg
a. GROUND . b. AER	RIAL	3 (about 40 Barrels of
D. SITE MAPPED?			aid at hill
YES. SPECIFY LOCATION	OF MAPS:		show of truly
E. COORDINATES 1. LATITUDE (degminsec.)		2. LONGITUDE (deg,-minsec.)	
	_		
	V. SITE INFO	RMATION	
A. SITE STATUS	10		į
1. ACTIVE (Those inductrial of municipal sites which are being us for weste treatment, storage, or dis on a continuing basis, even if infrequently.)	sed sites which no longer receive sposal wastes).	(Those sites that include such in where no regular or continuing us has occurred.)	
B. IS GENERATOR ON SITE?			
1. NO 2. YES(sp	ecily generator's four-digit SIC Code):		
C. AREA OF SITE (in acres)	D. ARE THERE BUILDINGS O		
One	1. NO 2. YES(s	pecify):	
	VI. CHARACTERIZATIO	N OF SITE ACTIVITY	
Indicate the major site activity(i	es) and details relating to each ac	tivity by marking 'X' in the appro	opriate boxes.
A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
1.RAIL	1.PILE	1. FILTRATION	1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	. 2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
4. TRUCK	TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS./TREATMENT	5. MIDNIGHT DUMPING
6.OTHER(specify):	e. OTHER(specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
	See	7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
:	C-L	8. SOLVENT RECOVERY	8.OTHER(specify):
	section	9. OTHER(specify):	
	1 VII Pant ()		
	the site fells within any of the criegor have filled out and attached to this for.		rts must be completed. Indicate
1. STORAGE 2	2. INCINERATION 3. LANDFIL	L SURFACE IMPOUNDMENT	5. DEEP WELL
6. CHEM/BIO/ 7	7. LANDFARM B. OPEN DU		10. RECYCLOR/RECLAIMER
A. WASTE TYPE	VII. WASTE RELATI	ED INFORMATION	
	2. SOLID 3. SLUDGE	4. GAS	
B. WASTE CHARACTERISTICS			
	ICHITARI E	TIME - A HIGH Y COLATO	ì
	2. IGNITABLE 3. RADIOAC 5. REACTIVE 7. INERT	8. FLAMMABLE	
9. OTHER (specify): C. WASTE CATEGORIES		·	
	Specify Items such as manifests, inve	entories, etc. below.	

Communication : ton	_	WAS	77 051 A				*** / >						
			TE RELAT										
	unt (specify unit of me		c. SOLVENT		gory		'X' to it				res	sent. f. OTHE	
A, SLUDGE	AMOUNT		UNT	<u>.</u>	LAN	d. CHE	MICAL		e. SOLIDS		AN	F. OTHE	.R
			-	1						}			1
UNIT OF MEASURE	UNIT OF MEASURE	דואט	T OF MEASU	JRE	UN	ITOFM	AE ASURE	E UI	NIT OF MEAS	JRE	Ur	NIT OF MEA	ASURE
	 				×·I							т	
PAINT,	(1) OILY	× (1)	HALOGEN SOLVENTS	ATEO	Ĥ	(1) ACID)\$		(1) FLYASH	}	×	J,,, LABOR	ACEUT.
(2) METALS SLUDGES	12) OTHER(epocity,	/j: (2	ON-HALO	SGNTD.		(2) PICKI	LING JORS		(2) ASBESTOS	5		(2) HOSPIT	'AL
(3) POTW		[_](3)) OTHER(ep	ecily):		(3) CAUS	STICS		(3) MILLING/I	MINE		(3) RADIOA	ACTIVE
(4) ALUMINUM SLUDGE						(4) PEST	TICIDES		(4) FERROUS	SMELT.	\perp'	(4) MUNICI	PAL
(5) OTHER(apocity):						(5) DYES	1/INKS		(5) NON-FERF	ASTES	┟┘	(5) OTHER	(apecily):
						(6) C YA	NIDE		16) OTHER(35	recify):			
						(7) PHE1	NOLS			1			
						(B) HAL	OGENS			1			
						(9) PCB				1			
						(10) MET	TALS						
					H	j(11) OTF	HER(spec	cify):		1			
			-	<u> </u>						!			
D. LIST SUBSTANCES	OF GREATEST CONCE						in descer	inding o	rder of hezard)		_		
		(mar	FORM irk 'X')	((mark	XICITY * 'X')			: 1		^ M(- 11417
1. SUBSTA			b. c.VA- LIQ. POR	в. нібн	b. MED		d. NONE	4. U.A.	SNUMBER	3. ~		OUNT	6. UNIT
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											_		
											_		
					-						_		
					 I						_		
	<u> </u>		VIII. HA	ZARD	DE	SCRIPT	TON						
FIELD EVALUATION hazard in the space p	N HAZARD DESCRIP	PTION:			the			that t	he listed haz	ard exis	its.	Describe	the
A. HUMAN HEAL			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
1													
1													
I				•									
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Continued From Page 4		
	VIII. HAZARD DESCRIPTION (continued)	<u></u>
B. NON-WORKER INJURY/EXPOSURE		•
		•
C. WORKER INJURY/EXPOSURE		
D. CONTAMINATION OF WATER SUPPLY	and the second s	
	**************************************	į
E. CONTAMINATION OF FOOD CHAIN		
	•	
F. CONTAMINATION OF GROUND WATER		
G. CONTAMINATION OF SURFACE WATER		
	•	

Continued From Front		. 14,	
—————————————————————————————————————	VIII. HAZARD DESCRIPTION (continued)		
H. DAMAGE TO FLORA/FAUNA			
	•		
1. FISH KILL			
,			
Ī			
L			
J. CONTAMINATION OF AIR			
	.		
		\mathcal{A}	
K. NOTICEABLE ODORS			
J			
L. CONTAMINATION OF SOIL			
L. CONTAMINATION OF SOIL			
M. PROPERTY DAMAGE			
L MIT OVERT I DAMAGE			
	•		
1			

Continued Prom Page 6			
	VIII. HAZARD DESCRIPTION (continued)		
N. FIRE OR EXPLOSION			
		•	
O. SPILLS/LEAKING CONTAINERS/RU	INOFF/STANDING LIQUID		
P. SEWER, STORM DRAIN PROBLEMS			
	- ·	· ·	
Q. EROSION PROBLEMS -			
		· · · · · · · · · · · · · · · · · · ·	
R. INADEQUATE SECURITY			
•			
S. INCOMPATIBLE WASTES			
	•		

		VIII. HAZARD DES	CRIPTION (continued)			
T. MIDNIGHT DUMPING						
U. OTHER (apacity):		· · · · · · · · · · · · · · · · · · ·				
No evidence Some white, to RR tracks an contaminations. of any spil runoff proble behind plant area was	milted sollars	Jehind on other on except here. dicatory	plant. De plant. De moderage moderage some co past of say pt	deres we amage de the plos was the plos was the plos was the plos was a see a	iste disposal itch adarent wed under lence of lence of roll id sorl t offeited	
	TY I	POPULATION DIREC	TLY AFFECTED BY SI	TF		
A. LOCATION OF POPULATION	8.	APPROX. NO. OPLE AFFECTED	C. APPROX. NO. OF PEO AFFECTED WITHIN UNIT AREA		GS TO SITE	
1. IN RESIDENTIAL AREAS						
2. IN COMMERCIAL 2. OR INDUSTRIAL AREAS						
3. TRAVELLED AREAS						
4 PUBLIC USE AREAS 4 (parks, schools, etc.)						
A. DEPTH TO GROUNDWATER(apeci	(w imita)	X. WATER AN	D HYDROLOGICAL DAT	C. GROUNDWATER L	ISE IN VICINITY	
D. POTENTIAL YIELD OF AQUIFER			NKING WATER SUPPLY	F. DIRECTION TO DRINKING WATER SUPPLY		
G. TYPE OF DRINKING WATER SUP	PLY			**************************************		
1. NON-COMMUNITY CIS CONNECTIONS	2. COMMU > 15 CO	INITY (apocity town): ONNECTIONS —				
	4. WELL					
EPA Form T2070-3 (10-79)	-	PAG	E 8 OF 10		Continue On Page 9	

Continued From Pege 8					
	X. WATER AND HYDROLOG	JICAL DATA (conf	tinued)		<u></u>
H. LIST ALL DRINKING WATER WEL	LLS WITHIN A 1/4 MILE RADIUS OF S				
1. WELL 2. DEPTH (specify unit)	3. (LOCATION population/buildings	•)	NON-COM- MUNITY (merk 'X')	E. COMMUN- LTY (mark 'X')
I. RECEIVING WATER					
I. RECEIVING WATER I. NAME	2. SEWERS	3. STREAMS/RI	IVERS		
6. SPECIFY USE AND CLASSIFICAT		5. OTHER(apec	:ity):		
6. SPECIPY USE AND GENERAL GENERAL	TON OF RECEIVING HATERS				
	XI. SOIL AND VEGI	TATION DATA			
LOCATION OF SITE IS IN:	AL SUIL AND YES	/TATION DATA			
. KNOWN FAULT ZONE	B. KARST ZONE	C. 100 YEAF	R FLOOD PLAIN	D. WETLAND)
E. A REGULATED FLOODWAY	F. CRITICAL HABITAT		GE ZONE OR SOLE SOURC	CE AQUIFER	
Mark 'X' to indicate the type(s) of				nerts.	
'x	geological material control	x'	Jessery, and company	parts.	
A. CVERBURDEN	B. BEDROCK (specify below)		C. OTHER (spec	city below)	
1. SAND					
2. CLAY					
3. GRAVEL	VIII CAU DED	TO THE LEVEL OF TH			· · · · · · · · · · · · · · · · · · ·
	XIII. SOIL PERA	MEABILIT			
A. UNKNOWN D. MODERATE (10 to .1 cm/sec.)	B. VERY HIGH (100,000 to) B. LOW (.1 to .001 cm/sec.)		C. HIGH (1000 to 10 cm	-	ec.)
G. RECHARGE AREA 1. YES 2. NO 3. CC	COMMENTS:				
H. DISCHARGE AREA 1. YES 2. NO 3. CO	COMMENTS:				
I. SLOPE 1. ESTIMATE % OF SLOPE 2. SF	SPECIFY DIRECTION OF SLOPE, CO	INDITION OF SLOP	E. ETC.		
J. OTHER GEOLOGICAL DATA					

•		XIV. PERMIT INF					
List all applicable permits he	ld by the site and	provide the related i	nformation.	**************************************	,	***************************************	
			D. DATE	E. EXPIRATION	F. IN	COMPLI (merk 'X')	ANCE
A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	(mo.,dey,&yr.)	DATE (mai,day,&yri)	1. YES	2. NO	3. UN-
	,					 	
							
						 	
•							
	WV PACE	+				<u> </u>	
NONE YES (summ	AV. PASI erize in this space)	REGULATORY OR E	ENFURCEMENT AC	IIUNS			
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	·	*		ţ			
		•		•			

PAGE 10 OF 10

EPA Form T2070-3 (10-79)

				REC	SION SITE	NUMBER			
Res Bur 5 // \	AL HAZARDOUS-WA	_		17	7				
FINAL ST	RATEGY DETERM	HOITANIA		+					
File this form in the regional Hazardous Waste System; Hazardous Waste Enforcement Task F	Log File and submit orce (EN-335); 401 N	a copy to: U. ISt., SW; Was	S. Environs	mental Pro 20460.	tection Ag	ency; Site	Tracking		
	I. SITE IDENT	IFICATION							
Bag Gott Con	arrho	B. STREET	Ross	al	PA				
c.city & Forest Pak	D. STATE	6f) 0		E. ZI	P CODE				
Indicate the recommended action(s) and agency	II. FINAL DETE	RMINATION	arking (Y) is	the appro	opriate hov				
	that bloate be		ACTION AGENCY						
RECOMMENDATIO)N		MARK'X'	EPA	STATE	LOCAL	PRIVATE		
A. NO ACTION NEEDED			>		•				
B. REMEDIAL ACTION NEEDED, BUT NO RESOUR	CES AVAILABLE								
C. REMEDIAL ACTION (If yes, complete Section IV). 								
D. ENFORCEMENT ACTION (If yes, specify in Part managed by the EPA or the State and what type o E. RATIONALE FOR FINAL STRATEGY DETERMI		II be primarily anticipated.)							
when public heal who take head and some so to fled and some so to fled and mo cut allowed the Case Development Plan has been P THE DATE PREPARED (mo., day, & yr.)	carry of	Richs	eakin, mod case has	MIL Pul to d	sels. Jehind	dunc dunc Carlace Carl FY THE			
H. PREPARER INFORMATION 1. NAME D T A C C		2. TELEPHO	HONE NUMBER 3. DATE (mo., flay, & yr.)						
1. Portogram	\mathcal{L}	17/3	257	227	7 4	71678	U		
III. REMEDIAL ACTION	S TO BE TAKEN WI	IEN RESOUR	CES BECOM	ME AVAIL	ABLE				
List all remedial actions, such as excavation, for a list of Key Words for each of the actions tremedy.									
A. REMEDIAL ACTION	B. ESTIMAT	ED COST		c.	REMARKS				
·	\$					•			
	\$: 1							
	\$								
	\$ '								
	\$								
	s								
	\$					•			
	s								
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		IV.	REMEDIAL ACTI	IONS				
A. SHORT TERM/EMERGENCY ACTIONS (On Site and Off-Site): List all emergency actions taken or planned to bring the site under immediate control, e.g., restrict access, provide alternate water supply, etc. See instructions for a list of Key Words for each of the actions to be used in the spaces below.								
1. ACTION	2. ACTION START DATE (mo, day, & yr)	3. ACTION END DATE (mo,day,&yr)	4, ACTION AGENCY (EPA, State, Private Party)	5. COST	6. SPECIFY 311 OR OTHER ACTION; INDICATE THE MAGNITUDE OF THE WORK REQUIRED.			
				s				
				\$				
·				s				
				\$				
				\$	·			
				\$,			
B. LONG TERM STRATEGY (Or wells, etc. See instructions					, removal, ground water monitoring aces below.			
1. ACTION	2. ACTION START DATE (mo,day,&yr)	3. ACTION END DATE (mo,day,&yr)	4. ACTION AGENCY (EPA, State Private Party)	5. COST	6. SPECIFY 311 OR OTHER ACTION; INDICATE THE MAGNITUDE OF THE WORK REQUIRED.			
				\$				
				\$.				
				\$				
				\$				
				s				

C. MANHOURS AND COST BY ACTION AGENCY		·
1. ACTION AGENCY	2. TOTAL MAN- HOURS FOR REMEDIAL ACTIVITIES	3. TOTAL COST FOR REMEDIAL ACTIVITIES
a. EPA		\$
b. STATE		s
c. PRIVATE PARTIES		\$.
d. OTHER (specify):		\$

EPA Form T2070-5 (10-79) REVERSE

U. S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE DATA BASE UPDATED 84/05/03 T.1 - ERRIS TURNAROUND DOCUMENT

PAGE: 254
RUN DATE: 84/05/03
RUN TIME: 17:41:40

EPA ID NO.: GAD054228432 SHEET 02 SITE NAME: BAGCRAFT CORP ALIAS AND ALIAS LOCATION DATA ******* *ALIAS* (ACTION * * - FOR DATA ENTRY USE ONLY) SEQ. NO.: *__* ALIAS NAME: *_____ * SOURCE: * * *ALIAS LOCATION* (ACTION * * - FOR DATA ENTRY USE ONLY) CONTIGUOUS PORTION OF SITE: * * STREET: *_____ * CONG. DIST.: *_* *____* ST: *_ * ZIP: *_ -__* CITY: CNTY NAME: *____* CNTY CODE: *__* LATITUDE: *__/__.* LONGITUDE: *__/_/_.* *ALIAS* (ACTION * * - FOR DATA ENTRY USE ONLY) SEQ. NO.: *_ * ALIAS NAME: *_____ * SOURCE: *_* *ALIAS LOCATION* (ACTION *_* - FOR DATA ENTRY USE ONLY) CONTIGUOUS PORTION OF SITE: *_* STREET: *_____ * CONG. DIST.: *_* *_____* ST: *__* ZIP: *____* CITY: CNTY NAME: *____* CNTY CODE: *__* LATITUDE: *__/_/...* LONGITUDE: *__/_/...*

REGION: 04

U. S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE DATA BASE UPDATED 84/05/03

T.1 - ERRIS TURNAROUND DOCUMENT

SITE DATA ******

EPA ID NO.: GAD054228432 SHEET 01

PAGE: 253

RUN DATE: 84/05/03

RUN TIME: 17:41:40

 (ACTION : *_* - FOR	DATA ENTRY U	JSE ONLY)					
SF ID: *_* *_* *_*	SITE NAME:	BAGCRAFT CORP		SOURCE:	s s	OURCE COUNTS	(NOT UPDATABLE)
_ *_*	STREET:	18 ROYAL DR	CONG	. DIST.:	06	NOTIS:	0
NATL PRIORITY: N	CITY:	FOREST PARK	ST: GA ZIP:	30050		STS:	1
HRS: **	CNTY NAME:	CLAYTON	CNTY CODE: 06	3		HWDMS:	0
HRS DATE (YY/MM): */_*	LATITUDE:	*/* LONGITUDE: *_	_/_/*			COMPOSITE:	0
RESPONSE TERMINATION (CHECK	ONE IF APPL	CABLE): PENDING *_* NO	FURTHER ACTION	x		OTHER:	0
ENFORCEMENT DISPOSITION (CH	ECK ANY THAT	APPLY): NO VIABLE RESPONSI	BLE PARTY *_*	VOLUNTARY	RESPONSE	*_*	

ENFORCED RESPONSE *_*

COST RECOVERY *_*

EVENTS *****

	(ACTION - FOR DATE ENTRY USE ONLY)		EVENT TYPE	DATE (YY/MM) STARTED	DATE (YY/MM) COMPLETED	EPA	COUNTS				
RESPONSE	*_*	(X)	SITE DISCOVERY (SD)		80/03						
EVENTS	*_*	(X)	PRELIMINARY ASSESSMENT (PA)		80/04						
	_	(X)	SITE INVESTIGATION (SI)	80/04	80/04	*_*	x				
	_		REMEDIAL ACTION (RD)	*_/_*	*_/_*	*_*	*_*	*_*	*_*	**	
	_		REMOVAL ACTION (RV)	*_/_*	*_/_*					**	
ENFORCE EVENTS	*_*		ENFORCEMENT INVESTIGATION (EI)	· *_/_*	*_/_*	*_*	*_*		*_*		
EVENIS	*_*		ADMINISTRATIVE ORDER (AO)	*_/_*	*_/_*	*_*	*_*		*_*		
	_		JUDICIAL ACTION (JA)	*_/_*	*_/_*	*_*	*_*		*_*		

REGION: 04

U. S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE DATA BASE UPDATED 84/05/03 T.1 - ERRIS TURNAROUND DOCUMENT

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EPA ID NO.: GAD054228432 SHEET 04

SITE NAME: BAGCRAFT CORP

REGIONAL ENTRIES

			DESCRIPTION
)	(ACTION - FOR DATA ENTRY USE ONLY)	ENTRY CODE	DATE1 DATE2 DATE3 FREE FIELD (YY/MM/DD) (YY/MM/DD)
)	* <u>*</u> *	**	* ***_/_/_**_/_/_***
)	*_*	**	* **
`	* <u></u> *	**	** **
)	*_*	**	**
)	*_*	**	* **
)	*_*	**	** **
`	*_*	**	**
,	*_*	**	** **_*
)	*_*	**	**
)	*_*	**	**
_ }	*_*	**	**
•	*_*	**	**
)	*_*	**	** **
)	*_*	**	** ***

REGION: 04

U. S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF EMERGENCY AND REMEDIAL RESPONSE DATA BASE UPDATED 84/05/03

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T.1 - ERRIS TURNAROUND DOCUMENT

EPA ID NO.: GAD054228432 SHEET 03

SITE NAME: BAGCRAFT CORP

SITE COMMENTS

(ACTION - FOR DATA ENTRY USE ONLY)	COMMENT NUMBER	COMMENT
* <u>*</u> *	**	**
_	**	**
* <u>*</u> *	**	**
* <u>*</u> *	**	
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* <u>*</u> *	**	*
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U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION IV

HAZARDOUS MATERIAL ENFORCEMENT AND RESPONSE PROGRAM

SITE NAME Bog Craft Corp. of America
SITE ADDRESS 16 Royal Dr. Forest Park
ORR Ded Divise Hay: Claston Co.
HOW/DATE IDENTIFIED 3/30/30 Gene Drake 961-773.7
SITE DESCRIPTION Alcoholo and acetates stored in
tank leaking into ground which is patural
inks also disposed of waste material in
WASTE RELATED INFORMATION Area in lack on left has
unoff from property down to RR tracks
HAZARD IDENTIFICATION
NAME OF CALLER See above
ADDRESS OF CALLER
TELEPHONE NUMBER
HAS THIS BEEN REPORTED TO ANY STATE OR LOCAL AUTHORITY? How, When?
No only EPH
FOLLOW-UP: Well want about 3 weeks, then
notify GAEPD to make site inspection
Called GAEPD PM April 9